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Editor's Notebook

This issue of *RDP* features a special section on telecommunications in rural areas. New telecommunications technology promises to better link rural and urban areas and, hopefully, to bring more jobs to rural areas as it allows greater flexibility in locating businesses. But rural areas also face obstacles in adopting the new technology, such as higher costs because of less dense settlement and outdated equipment that will have to be upgraded.

In August 1998, the Economic Research Service, TVA Rural Studies, and the Western Rural Development Center sponsored a workshop in Washington, DC, on rural telecommunications. Organized by Peter Stenberg of ERS and David Freshwater of TVA Rural Studies, the workshop presented papers on a number of topics pertinent to rural telecommunications. This *RDP* issue contains articles selected by Peter Stenberg from several people who gave papers at the workshop.

Communities that lack high-speed broadband connections may have to develop new strategies to attract greater investments in telecommunications. Kathleen McMahon and Priscilla Salant discuss strategic planning for telecommunications improvements, with particular attention to the experiences of communities in Wyoming and Colorado. Effective planning starts with a needs assessment survey and requires cooperation by public officials, businesses, and individual households.

Providing adequate health care has become more difficult in those rural communities losing population, and even growing areas have had trouble keeping up with the latest advances in medical care. Many small towns have lost their hospitals. Susan M. Capalbo and Christine N. Heggem look at two promising options, telemedicine and limited-service hospitals. Electronic connections between rural practitioners and larger hospitals and specialists are becoming so refined that even some diagnostic tests can be conducted over phone lines. Limited-service hospitals (such as critical-access hospitals) have permitted emergency, primary, and outpatient care to be offered in communities that have not had such care available or have lost it.

The needs of disabled people are often overlooked in rural telecommunications discussions. Proportionally, more disabled people live in rural than urban areas, yet facilities in rural areas are often less accessible than those in urban areas. Alexandra Enders and Tom Seekins examine the special problems of the disabled and recent legislation to ensure them equal access to telecommunications.

Another important group is the older population, especially those over 85. Carolyn C. Rogers shows how this most rapidly growing part of the population has characteristics with important policy implications—they are mainly women, often in poor health, often poor, and often live alone. As more people enter this group, policymakers will be increasingly challenged to fashion policies that take into account the particular needs of the oldest old.

The South as a whole has prospered in the 1990's. In rural areas, however, poverty, discrimination, and inadequate education continue to plague workers and dampen their prospects for a brighter future. As the article by Thomas D. Rowley and David Freshwater argues, many living in poverty are ill prepared to compete in today's globalized labor market and are even less prepared for the higher skill requirements of the future. More effective education and training programs coupled with better assistance in helping poor people find jobs are necessary if the problems of the rural southern labor force are to be overcome.

Finally, Patrick Commins, Karen S. Hamrick, Anicca C. Jansen, Kevin Murphy, and Peter L. Stenberg report on rural issues in the Republic of Ireland and Northern Ireland. Visits by ERS economists to the island of Ireland and return visits by Irish researchers show that the Irish have much in common with the United States, including a restructured agricultural sector and rural outmigration. However, administration of rural development programs differs substantially from that of the United States.

Douglas E. Bowers

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Strategic Planning for Telecommunications in Rural Communities

The high-speed, broadband infrastructure needed to take advantage of telecommunications opportunities is not available in many rural communities. To overcome this problem, some local leaders are using a planning process that helps identify which strategies are most likely to meet top-priority goals and attract new telecommunications investments. The most effective strategic planning processes involve broad-based input from businesses, public agencies, and households.

Public officials herald the potential of telecommunications to spark a rural renaissance. As evidence, they point to electronic commerce, distance learning, and telemedicine opportunities that were unimaginable even a decade ago. Unfortunately, the high-speed broadband infrastructure necessary to realize these opportunities often bypasses rural areas, which may lack the market to attract such investment or may fail to capitalize on local resources. Consequently, rural communities must develop a plan that identifies strategies with the most potential for taking advantage of telecommunications.

A generation ago, the economic well-being of rural communities often depended on how close they were to an interstate highway. In the next century, their vitality may depend more on the sophistication of their communication services. High-speed, broadband networks can reduce the disadvantages that come with low population density and remoteness from cities, without rural areas becoming more urban. Telecommunications can benefit rural firms by giving them direct access to customers and linking them to breaking news about markets, suppliers, technology, and government regulations. Such networks can also make it less expensive and more efficient for firms to locate in rural places. And small towns can import services like health care through telemedicine technology and education through distance learning facilities, enhancing quality of life.

Unfortunately, long distances from cities and low population densities delay deployment of advanced telecommunications in rural areas. Telecommunications providers realize a higher return on their investment in urban areas where fixed costs are spread over a larger number of customers and volume is greater. In addition to incurring long-distance charges for routine calls (because of geographically small local calling areas), many rural customers lack even the basics: local access to single-party, touch-tone service with digital switching, or line quality adequate for voice, data, and fax transmission at 28,800 bits per second (Parker).

The Telecommunications Act of 1996 was intended to promote competition that would in turn lower prices and improve services. However, as many rural analysts have argued, competition among service providers will not come quickly to rural areas, largely for the reasons mentioned above (Stenberg and others). Because it is harder to attract providers to rural areas, rural residents who want advanced telecommunications services must be more proactive than their urban counterparts to attract new investments. Strategic planning can help achieve this goal by evaluating the local market, community leadership, existing opportunities, and potential technology applications.

Strategic planning also examines industry trends and can indicate the feasibility of new technologies, such as cable modems and Asymmetric Digital Subscriber Lines (ADSL). Cable modems let users send and receive data

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through their cable television systems. Users can download data at speeds up to 10Mbps (200 times the speed of a 56k modem). Although the cable company must make potentially costly upgrades to the existing systems, some rural communities have been successful in obtaining this service, which offers an affordable Internet option for small businesses and residents. ADSL, introduced in the last year, converts twisted-pair telephone lines into a high-speed channel with speeds ranging from 1.5 to 6.1 Mbps. To date, this service is available primarily in urban areas.

Strategic Planning: An Effective Response

Strategic planning for telecommunications offers many benefits to communities:

- Identifying gaps in existing telecommunications infrastructure by pinpointing problems that limit economic development, service delivery, or quality of life.
- Helping people decide which problems are most important to address first.
- Creating opportunities for partnerships by identifying common interests.
- Building more broad-based support for new telecommunications applications.
- Providing a mechanism to coordinate multiple strategies.

A complete strategic planning process for telecommunications involves assessing needs, identifying goals for addressing the most critical issues, and crafting an appropriate action plan.

The **needs assessment** is intended to gather and analyze information about the local telecommunications environment from both a demand and supply perspective (see "Elements of a Telecommunications Needs Assessment"). It documents:

- Existing telecommunications infrastructure and services (see "Basic Telecommunications Infrastructure").
- Business, public agency, and household use of (and satisfaction with) existing infrastructure and services.
- Potential demand for expanded infrastructure and service.
- Financial resources and potential partnerships for implementing strategies to address telecommunications needs.

With this information, a community can identify trends, make projections, and evaluate the feasibility of specific alternatives.

The second step in strategic planning for telecommunications is to identify **top priority goals** based on the findings of the needs assessment. This process helps people work toward a common end. To be successful, the goals should reflect a consensus from the community about the general course of action. Establishing these goals can convince telecommunications firms of a community's focus, effort, and ability to measure progress.

The third step is to develop an **action plan** that lays the framework for implementing community goals. It identifies specific strategies, funding resources, organizational issues, staffing needs, and a timeframe for implementing each strategy. The action plan should contain strategies that complement one another and should present a realistic framework for accomplishing top priority goals. Like the first two stages in strategic planning, the action plan should be evaluated and adjusted to reflect changes in the local telecommunications environment.

Strategies that may be included in the action plan fall into two general categories. The first involves efforts to attract outside investment for the benefit of the entire community. For example, demand aggregation is a strategy to combine the buying power of local telecommunications users to build a business case that will attract investment in telecommunications infrastructure. Another strategy is to find an anchor tenant or single telecommunications user that generates enough volume of business to justify a provider's cost of upgrading the local infrastructure. A third strategy is to cultivate demand for telecommunications by providing training opportunities, public-access terminals, and demonstrations. The more people know what they can do with telecommunications, the more service and capacity they will want, and the more lucrative the market will be for potential investors. Working with businesses and public agencies to develop technology plans is another strategy that encourages people to articulate and learn what they want in the future.

The second category of strategies involves bringing local public and private resources together to invest in meeting one particular need, for example, that of health care providers. These strategies rely on investment from the community through public-private partnerships to build networks. The networks are limited in scope and generally have a defined set of users, such as hospitals in a telemedicine network or schools in a distance-learning network. While these networks bring valuable services to the community, they may not link to one another and usually are not available to the general business community. Building these networks may, however, provide the critical mass necessary to attract additional investment from the telecommunications provider.

The following two case studies demonstrate how strategic planning has been used by rural communities where low volume and long distances have discouraged investment by service providers. Each region determined what strategies would work best by looking at their local resources and priorities.

Northeast Wyoming Economic Development Coalition

The Northeast Wyoming Economic Development Coalition (NWEDC) is a five-county organization that has been engaged in a variety of economic and community activities since 1994. The region is sparsely populated, with an average density of 3.4 people per square mile (as opposed to 28.1 people per square mile for Wyoming's most populous county, Laramie). Its largest community is Gillette, with a population of about 22,000.

In 1997, the NWEDC was awarded a grant from the U.S. Department of Commerce to identify telecommunications needs and examine potential technology applications. NWEDC members applied for the grant to address a perceived lack of coordination between businesses and community organizations about telecommunications needs. They recognized that they needed to build support for action by educating consumers and increasing awareness among public officials about the need for better infrastructure and services.

NWEDC's technology committee hired a consultant to work with officials representing businesses (including the telecom providers), government, education, and health services to prepare a strategic plan. The planning process included an inventory of the existing telecommunications infrastructure and services, a community survey to assess demand, goal setting, and an action plan. Early in the project, the technology committee held public meetings throughout the five-county area to review the planning process, solicit volunteers for the survey, and increase awareness about technology issues. After the meetings, volunteers distributed the surveys to businesses and community organizations.

After survey results were compiled and the telecommunications inventory completed, a second round of meetings addressed the adequacy of existing resources and problems identified by the survey. Meeting participants also agreed on goals for improving telecommunications in the region.

The process identified different priorities for each of the counties in the project. For example, in Campbell County, relatively large telecommunications users like the coal companies, hospital, and schools had the potential to coordinate their demand and attract better services. In Niobrara County, the largest town had invested funds in a citywide fiber network for the municipal utility but wanted to recapture some of its investment by leasing excess capacity. Crook and Weston Counties had unreliable phone lines that needed upgrading. And in Converse County, local leaders wanted to negotiate with the cable company to get high-speed data services.

The community meetings yielded a number of strategies that were reflected in the NWEDC action plan. One strategy was to capitalize on existing telecommunications capacity by promoting technology projects that use the infrastructure already in place. The Converse County Hospital, for example, was linked through a leased digital T-1 phone line to a larger hospital in Casper, but was not using the video-conference capability due to reimbursement issues. Another strategy was to seek outside funding, such as grants, for new project startup costs, while relying on local contributions for current project costs. A fiber-optic network in Lusk was constructed primarily with grant funds, with the intent that revenue from leases support upgrades to the network. High-cost projects were to be phased in over time, with some of the cost being incorporated into a community's capital improvement plan.

Since the NWEDC adopted its strategic plan in February 1998, the region has undertaken a number of initiatives to address its telecommunications needs. Leaders in Gillette are meeting with Sprint Communications to establish a point of presence (POP) at the U.S. West central office switch within the city (see box, "Basic Telecommunication Infrastructure"). Powder River Energy, an electric cooperative in the northeast corner of the region, is using the study findings to investigate the feasibility of offering telecommunications services locally.

Lusk, one of the smallest towns in the region, has been featured in nationally televised Microsoft commercials that herald the town's use of the Internet for ranching and commercial activities. Nearby Douglas has made recommendations from the action plan the focal point of their economic development efforts. They have successfully recruited the regional cable company, CommuniComm Services, to relocate their headquarters. As a result, the cable company has wired the town with fiber optics and is in the process of deploying cable modems. The economic development agency in Douglas is also obtaining private-public funding for a technology training center. Among the activities planned for the center is the use of virtual reality technology to train workers for area companies.

Morgan County, Colorado

Morgan County is located on the plains of northeastern Colorado approximately 80 miles from Denver. Out of a total population of 25,000, some 9,100 live in Ft. Morgan, the county seat and largest community. Most of the county's land is used by ranchers and farmers, while

Elements of a Telecommunications Needs Assessment

An inventory of existing infrastructure and services:

- Local exchange carrier characteristics: service area, central offices and equipment, costs of service.
- Telecommunications network characteristics: interoffice backbones, wide-area networks, and local-area networks.
- Long-distance services (depending on boundaries of the local access and transport area and the existence of extended-area service).
- Wireless (including cellular, personal communication services or digital wireless, satellite).
- Internet service provider characteristics: local dial-up access, number of modem lines and their speed, dedicated lines, connection to backbone, variety and cost of services.
- Television / video (including both public and private cable, satellite downlinks and uplinks, and interactive video).
- Government networks operated by public schools, libraries, and other public agencies.

Current use of and satisfaction with services on the part of businesses and public agencies:

- General characteristics: type of organization, number of employees, whether main or branch office.
- Telecommunications services: number of lines, calling services, extensions, computers.
- Local-area networks (including number and location of connections, number of computers on network, architecture).
- Wide-area networks (WAN remote locations, leased lines).
- Internet access (dial-up connections and speeds, direct connections and speeds).
- Technology assessment (applications and future plans for expansion).
- Technology support (staff, training, contracted services, technology plan).
- Service providers (telephone, long distance, Internet, cellular).
- Cost data (estimated monthly cost associated with each service).
- Partnerships (funding partners, shared services).

Current use of and satisfaction with services on the part of households:

- General characteristics: household size, location, income.
- Telecommunications services (number of lines, various calling services such as call waiting and caller ID).
- Internet access and use (dial-up connections, whether local or long-distance, cost).
- Service providers (local, long-distance, Internet, cellular).
- Cost data (estimated monthly cost associated with each service).
- Interest in Internet training.
- Existence of home-based business.
- Experience with and interest in distance learning.

agriculturally related industries, such as beef processing, employ the most people.

As in northeastern Wyoming, local leaders in Morgan County have been concerned about inadequate telecommunications services, which they perceived as a constraint on recruiting new businesses. In addition, the high cost of leasing a line for existing businesses diverted investment from other needs, such as workforce training. Finally, the county's small population made it difficult to attract investment from the Local Exchange Carrier (LEC), which is U.S. West.

In 1998, the Colorado Rural Technology Project (CRTP) awarded a grant to the Morgan County Telecommunications Coalition to prepare a business plan that would analyze the county's market position in attracting telecommunications investment. The coalition consists of community representatives from the Chamber of Commerce, Economic Development Corporation, local government, community college, public schools, health services community, and a number of business and community organizations.

Unlike the NWEDC, which conducted a survey and inventory, the Morgan County Coalition first established its goals—primarily diversifying the economy and strengthening local business through telecommunications infrastructure—and then conducted a process to identify strategies that would achieve these goals (Morgan County Telecommunications Consortium). A telecommunications inventory found several special-purpose telecommunica-

Basic Telecommunications Infrastructure

The local telephone network has two parts. The first consists of central offices or locations where the telephone company houses switching devices to open and close circuits and to change operating parameters. The second part consists of telephone lines that connect customers to the switching facilities. Companies that own and operate local telephone networks are called Local Exchange Carriers (LEC's). LEC's sell "access" to their local networks to long-distance companies, which in turn originate and complete long-distance phone calls. The central office where local calls connect to the long-distance network is referred to as the "point of presence" (POP). The POP is generally located in the largest city of a local access and transport area (LATA), which is an area designated by the FCC for providing and administering telephone services.

Local calls connect to the POP either through the switched network or, for high-volume customers, through a private leased line directly to the POP. Even if a long-distance company has a fiber-optic line running through the area, the connection to the long-distance network can only be made at the POP. The cost of a leased line depends both on the distance between the two points and the speed of the line.

LEC's may or may not offer advanced telecommunications services. Among the services proposed as possible solutions to rural bandwidth problems are ISDN (a network that allows simultaneous, digital transmission of voice, data, fax, and video over copper wires); ADSL (special equipment that connects to an existing phone line and separates voice signals from high-speed data while providing a direct, permanent connection to the Internet); and ATM (a switching technology to break information into very small pieces that can be transmitted and reassembled quickly). If the central office for a particular service area does not have the capability for these services, customers may lease a line to the nearest central office that does have the capability. The longer the distance between the customer and the central office, the more costly it is to lease a dedicated line to access these services.

tions networks in the area. For example, the High Plains Rural Health Network provides two-way interactive video communication for clinical consultation, health training, and administrative conferences. It serves 17 rural sites in Colorado, Kansas, and Nebraska, but only hospitals can use the network. And Morgan County Community College, as part of Colorado's two-way, interactive video network, maintains three separate networks to provide classes to remote sites in eastern Colorado. Like the health network, the educational network delivers a specific service and is not publicly available to other organizations or businesses. Therefore, businesses and other users must incur the cost of a leased line to Denver if they want to access advanced telecommunications services.

The coalition then solicited public input to gauge current and potential demand. It conducted a survey of business and community organizations, as well as focus group meetings with (1) business stakeholders including financial institutions and economic development interests; (2) telecom providers and educational institutions; (3) the general public, including senior citizens, farmers, and civic groups; and (4) government and health care providers.

Three important problems emerged from the public input phase. First was the high expense incurred by businesses for the leased line to Denver. Second was the separate video networks operated by the community college, which were perceived as allowing only limited programming options and inefficient delivery. And third was the lack of resources at the Morgan County School District, where limited online and networking facilities hindered communications, and an understaffed technology group meant that the district was missing opportunities to receive educational discounts for Internet access.

To reduce the cost of the leased line, the study recommended that the coalition work with neighboring counties to find a centralized switch that could be upgraded for the benefit of the larger region. It also recommended that the Ft. Morgan School District and Town of Morgan cooperate on constructing a citywide network that would aggregate their demand and provide more leverage for negotiating upgrades. The State of Colorado is also considering a similar strategy to aggregate demand in order to establish access points for Asynchronous Transfer Mode (ATM; see "Basic Telecommunications Infrastructure") in all counties (Colorado Commission on Information Management).

The Morgan County telecommunications business plan was completed in July 1998, and generated coverage from the *Denver Post*, *Christian Science Monitor*, and CBS News "Eye on America." As part of the strategy to build the market for telecommunications, technology training will be part of a chamber of commerce business symposium in spring 1999 and at a Y2K workshop later in the year. Following completion of the plan, the coalition met with U.S. West to discuss the recommended strategies for infrastructure upgrades. Although a followup meeting was to be scheduled, the Telecommunications Coalition, largely a volunteer group, was relatively inactive in the latter part of 1998. With funds recently made available by the State legislature to upgrade infrastructure in rural areas, the group is reconvening to raise matching funds and to find a telecommunications provider to bid on the project.

Conclusions

Strategic planning for telecommunications can be a time-consuming process, even in small towns. Communities should allow 3 to 6 months to complete the process, depending on the level and method of public input. Dividing the strategic plan into phases or smaller tasks may allow the community to contract out for the more technical services while completing some work inhouse. This approach also allows the community to select a contractor with expertise specific to that particular phase of the project. An engineering firm, for example, would be an excellent choice for system design but may not have the expertise to assess the market or facilitate the sort of consensus building that is required for strategic planning.

If a survey is used for gathering information during the needs assessment phase, it will take several months to design the questionnaire, select a sample, administer the survey, and evaluate the results. Obtaining information through focus groups or public meetings can be done more quickly, but does not offer the comprehensive information about telecommunications use that can be obtained by conducting a representative sample survey.

For two reasons, we recommend that the needs assessment include a survey of households, as well as the more obvious and larger telecom users such as businesses and public agencies. First, home-based businesses that rely on telecommunications need reliable and affordable broadband access to the Internet. They tend to be higher income and offer good economic development potential (Salant and others). Only by including a household component to the needs assessment can this source of demand be measured. Second, by involving households in the needs assessment process, it is easier to build broad-based support for improved telecommunications. Especially in small towns where resources are scarce, strategic planning processes need to draw on as broad a segment of the community as possible and demonstrate a consumer demand for broadband Internet service.

Gathering data about the existing telecommunications infrastructure is another time-consuming task. Most of the information is already published in other sources, but finding and analyzing the data takes time. Often the available information is incomplete and needs to be supplemented with interviews and additional research. One of the best sources of information on telecommunications infrastructure is the State public service regulatory agency. Many States also have an office of technology or information management that maintains data about State networks.

Local telecommunications providers can provide information about the location of central offices, switching features, trunk lines, and service cost. Sometimes this information is available from company web sites, but because these are private corporations, much information is considered proprietary and may require great persistence to obtain. National agencies, such as the Federal Communications Commission (FCC), National Telecommunication Infrastructure Administration, National Exchange Carrier Association (NECA), and National Telephone Cooperative Association, provide information on industry trends and issues.

If strategies are to be well-suited to the local situation, several criteria should be considered.

- Can the project be sustained beyond the startup phase?
- Does the stategy serve the most people or create the most jobs relative to the amount of resources required?
- Can sponsors leverage funds from multiple sources through partnerships?

The success of a planning effort depends on the commitment of public officials to follow through with the plan's recommendations. If the process is too long, staff and elected officials may not stay committed. Sometimes, a single champion can move a project forward, but buy-in from the entire community is always necessary if public funds are to be invested in the project. The most effective strategic planning process builds broad public support by involving multiple stakeholders, increasing community awareness, and reflecting the needs of the entire community.

For Further Reading . . .

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Susan M. Capalbo and Christine N. Heggem

Innovations in the Delivery of Health Care Services to Rural Communities
Telemedicine and Limited-Service Hospitals

Over the last decade, changes in health care policy, demographics, and technology have presented new opportunities for delivering medical care in rural areas. Telemedicine and limited-service hospitals are two innovations currently used to strengthen the likelihood of continued health care in rural communities. Montana is one of the few States where both these options have been implemented, providing a unique environment for observing the effects of each on rural health care systems, communities, and individuals.

Health care policy and the presence of health care services in rural areas are important concerns in American society. The viability of many rural, agriculture-based communities depends on a number of factors, including the quality and level of health care services accessible by the population. Over the last decade, changes in health care policy, demographics, and technology have presented new opportunities for delivering medical care in rural areas.

Nationwide, two different approaches have been implemented to meet the challenge of providing health care in rural communities. Telemedicine is a rapidly growing technological application for delivery of services when distance separates the provider and the patient. And limited-service hospitals, known as Critical Access Hospitals (CAH), are designed to address the needs of distant rural communities where full-service hospitals are not financially viable. At first glance, these approaches seem quite different since one attempts to expand the range of services provided by a rural health care facility while the other effectively limits services. However, both are innovations that may strengthen the rural health care system, affect access to/quality of health care, and contain costs of delivering health care service.

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With every health care innovation comes the challenge of determining whether the benefits outweigh the costs, and whether public support is justified. From an economic perspective, the main considerations include how these changes in the delivery of health care services will affect health care *quality, access,* and *cost*. Both public sentiment and Federal directive hold that rural residents are entitled to some basic level of health care services (however that is defined), but what combination of services and delivery is most efficient, and how does that change as the demographic and geographic parameters change? To determine this, relevant costs and benefits must be identified and measured. Applying economic methods to the valuation of changes in rural health care systems may be a first step to understanding the effects of each option on rural communities, on the viability of existing health care facilities, and on consumers.

This article presents an overview of telemedicine technologies and Critical Access Hospitals that is key for evaluating the net benefits to rural residents. Anecdotal evidence on the impacts of limited-service hospitals and telemedicine technologies in rural Montana suggests that different situations require different health care solutions. Varying combinations of full-service hospitals, limited-service hospitals, telemedicine, and other options will make economic sense depending on economic and demographic conditions. The increased flexibility afforded by current legislative changes in health care regulations is a move in the right direction.

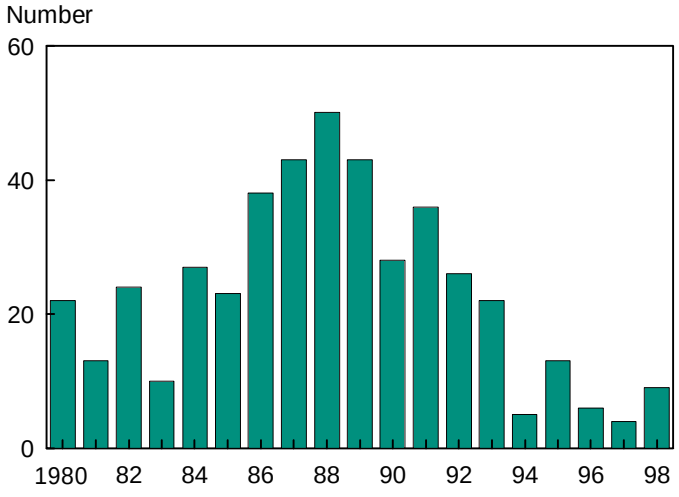
Changes in Rural Population, Hospital Closure, and Health Care Policy

Over 300 rural hospitals have closed since 1980, with closures peaking in the late 1980's (fig. 1). The health care literature commonly cites several reasons, including changes in the makeup of rural population, difficulty in retaining physicians, and the restructuring of Medicare reimbursement. Outmigration of younger residents from agriculture-based areas has resulted in rural population decline and a disproportionately large number of elderly people in rural areas (Rathge and Highman). Small and isolated community hospitals struggle to attract and keep physicians, compounding the challenge of keeping a low-volume facility open.

In 1983, Medicare reimbursement to hospitals shifted from a cost-based to a prospective payment system, so hospitals began to be paid a fixed amount depending on diagnosis rather than a reimbursement according to "reasonable cost" of providing care. Under the prospective payment system, smaller rural facilities commonly fail to cover costs on Medicare patients. This, in combination with the fact that rural hospitals serve a proportionately greater elderly and low-income population than their urban counterparts, has worsened the financial crisis for many rural hospitals.

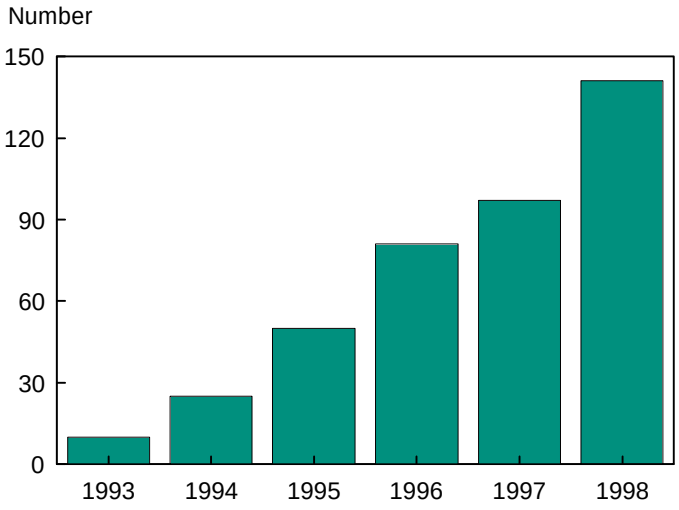
The actual and potential loss of hospitals has left rural citizens with very different health care options than in years past. Two new delivery methods implemented to mitigate the scarcity of services are (1) new types of rural hospitals exhibiting a limited-service philosophy and (2) a more widespread use of telemedicine.

Figure 1
Rural hospital closures, 1980-98
After peaking in the late 1980's, hospital closures continued, though at a slower rate



Source: American Hospital Association Statistical Profile, 1994 (1980-93); Office of the Inspector General (1988-95); Susan Reif, Sheps Center for Health Services Research, 1999 (1995-98).

Figure 2
Telemedicine programs reporting activity in the United States, 1993-98
The number of telemedicine programs nationwide has grown steadily in recent years



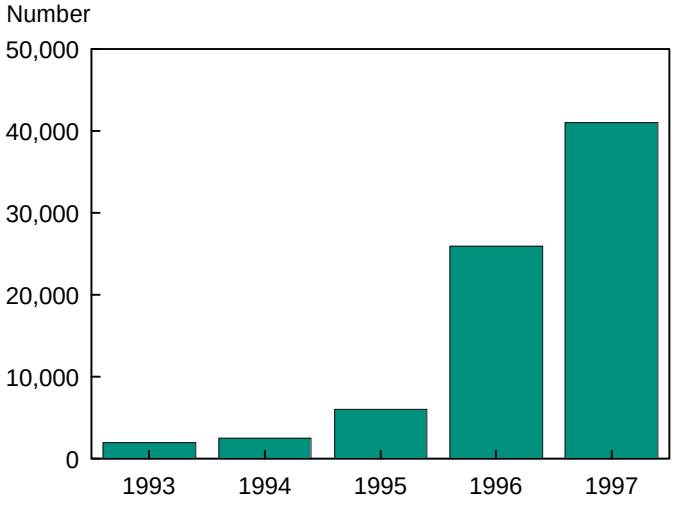
Source: Association of Telemedicine Providers, *1998 Report on U.S. Telemedicine*, Portland, OR, 1999.

Telemedicine Offers New Options for Rural Health Care

Telemedicine is the use of electronic information and communications technologies to provide and support health care when distance separates provider from patient. A telemedicine network connects distant "spoke" sites, often located in rural communities, both with one another and also with the "hub" site, which is usually a larger urban center. Distance-bridging tools include teleradiology (sending x-ray images via electronic means), the use of telephones to perform diagnostic tests (such as cardiac checkups), and interactive video consultation. Interactive video can bring distant sites into simultaneous communication, and can be used for conferences between patients and practitioners.

The dramatic rise in the number of telemedicine networks (fig. 2) suggests a perception that by joining forces with a larger hospital, a rural facility can increase its chances of survival. According to the Association of Telemedicine Service Providers (ATSP), the number of telemedicine consults has risen more than twentyfold in 5 years (fig. 3). (A consult refers to a specific patient-provider interaction, or a provider-provider interaction.) By 1998, ATSP had identified 141 active telemedicine programs in the United States. The most widely used specialty applications are mental health, dermatology, cardiology, orthopedics, and emergency room/triage services. Other uses of telemedicine include followup procedures for surgery patients, pediatrics, pathology, nutrition, primary care, and neurology, as well as radiology and clinical drug trials.

Figure 3
Telemedicine consults, 1993-97
Telemedicine is rapidly becoming a widely used treatment option



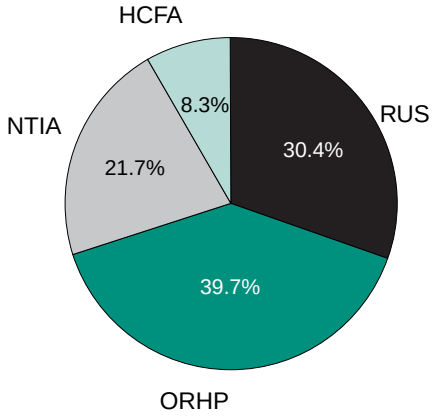
Source: Association of Telemedicine Providers, *1997 Report on U.S. Telemedicine*, Portland, OR, 1998; *Telemedicine Today Magazine* Program Reviews, 1994, 1995, 1996.

Federal funding—including grants for equipment and research, subsidized long-distance telecom rates, and Medicare reimbursement policy—has nurtured the development of telemedicine. Federal agencies focused on rural development issues, such as the Rural Utilities Service and the Office of Rural Health Policy, have been active in funding telemedicine programs (fig. 4). Whether grant-initiated programs will be able to continue once outside support ceases is difficult to determine due to the fairly recent nature of these projects and lack of standardized data.

The Telecommunications Act of 1996 includes rural health care as one of its targets. In essence, the law encourages development and use of interactive video by providing subsidies to rural hospitals in the form of reduced long-distance rates. Connections between video sites are usually made via high-bandwidth telephone cable, so one of the highest variable costs faced by a telemedicine program is a charge equivalent to constant multiple long-distance telephone calls.

Reimbursement is another area where Federal health care policy could greatly affect the use of telemedicine. Teleradiology consults have been reimbursed by Medicare nearly since their inception. However, interactive video consultations are generally not reimbursed by Medicare, since present policy in many States requires a "face-to-face encounter between patient and provider." In the past, this lack of physician reimbursement under the Federal insurance plan has discouraged practitioners from consulting by video.

Figure 4
Selected sources of Federal funding for telemedicine, 1993-96
At the Federal level, telemedicine funding comes from a variety of sources



Note: RUS = Rural Utilities Service; HCFA = Health Care Financing Administration; NTIA = National Telecommunications and Information Administration; ORHP = Office of Rural Health Policy.

Source: Federal Telemedicine Gateway web site, 1998.

Federal dollars have also been used to inventory, evaluate, and standardize telemedicine programs. One of the main oversight groups is the Joint Working Group on Telemedicine (JWGT), which has reported to Congress on the use of advanced telecommunications services for medical purposes, and inventoried programs and Federal spending for telemedicine. A web site, the Federal Telemedicine Gateway (http://www.tmgateway.org/), was established to convey this information. Additionally, in 1998, the U.S. Department of Health and Human Services established a new office directed specifically toward telemedicine activities. Responsibilities of the Office for the Advancement of Telehealth include policy and program development, assistance for health officials and grantees, and production of health education tools.

With telemedicine, opportunities exist for the rural hospital or clinic to expand its scope and quality of services, increase cost-effectiveness in providing existing services, and to enhance the collaboration with a larger hospital. Both the rural residents and the hospitals are potential beneficiaries from this technology, although the magnitude of these net benefits will vary by community.

Critical Access Hospitals: A Tactic for Preserving Health Care in Isolated Communities

Historically, one strategy to maintain acute health care services in rural communities with health care facilities at risk of closing has been the conversion of full-service hospitals to limited-service hospitals. These hospitals tend to be in remote sites, with services limited to short-stay inpatient care and emergency care. In matching the needs of

rural residents with financially viable health care, the limited-service facility shifts its emphasis from inpatient and surgical services to emergency, primary, and outpatient care.

The Critical Access Hospital (CAH) is the most recent form of the federally recognized limited-service model. The CAH program started as part of the 1997 Balanced Budget Act. Earlier precedents were the Rural Primary Care Hospital (RPCH)—authorized in New York, West Virginia, North Carolina, South Dakota, Kansas, Colorado, and California—and the Medical Assistance Facility (MAF), developed and implemented in Montana. While the CAH is a hybrid of both the RPCH and MAF models, it more closely parallels the structure of the MAF model.

The CAH allows for cost-based reimbursement by Medicare and is designed to provide inpatient care to ill or injured persons prior to transport to another hospital or to provide inpatient care for no longer than 96 hours. Only facilities located in a county with fewer than six residents per square mile or more than 35 road miles from the nearest hospital are eligible to be certified. A CAH is limited to 15 or fewer inpatient beds. Emergency room and inpatient services are provided by physicians, physician assistants, and nurse practitioners. CAH rules allow midlevel providers (physician assistants and nurse practitioners) to practice without a supervising physician onsite, while staffing requirements for registered nurses and emergency room coverage are also relaxed.

To participate in the CAH program, a State must submit a health plan. According to a September 1998 study, 43 States had expressed interest in the CAH program. Of these, 16 States had already submitted a State health plan, with most approved and the others awaiting approval by the Health Care Financing Administration (HCFA), which administers the Medicare program. At that time, 18 additional States were in the process of drafting State plans. Six States did not plan to participate in the CAH program due to lack of eligible or interested health care facilities, and one State did not participate in the study. Thirty RPCH's in four States have been designated as CAH's, and there is one newly licensed CAH. The 12 Montana MAF's are expected to convert in 1999 as well. State program directors estimate 200 to 300 possible additions to the CAH program (Reif and Ricketts).

Montana Health Care Transformed by Both Limited-Service Hospitals and Telemedicine

Montana provides a unique opportunity to observe the impacts of limited-service hospitals and the addition of telemedicine to the menu of health care services available to rural communities. In 1987, the Montana legislature created the Medical Assistance Facility (MAF) in response to the accelerated rate of rural hospital closure. It was designed to serve remote communities with small health care facilities to ensure at least emergency and basic health care.

As of 1997, the MAF model had been implemented in 12 communities in Montana. Anecdotal evidence suggests that the MAF's helped maintain and improve access to local health care. Shreffler and others found that local decisionmakers viewed MAF conversion as a method of stabilizing or restoring the local health care services most needed or used by their community residents. As a whole, the issues most influential in the conversion decision were those that made the provision of basic health care services in these isolated communities more stable and sustainable. The flexibility of the MAF model, cost-based reimbursement, and relaxed staffing requirements all represented improved options for viability that full-service hospital licensure did not. Notably absent from the list of concerns over conversion was the fear of reduction in local services. In reality, these facilities had limited their services gradually over the years prior to conversion. Conversion to a MAF was viewed as a means to save and strengthen both the hospital's core—basic health care—and the community's viability, since the loss of reasonable access to health care often signals a decline in economic development (Cordes and others).

MAF's fulfilled the need and/or desire for local emergency coverage, and improved potential for recruiting and retaining primary care providers. Both aims are more realistic and affordable with the MAF model because it uses midlevel providers in addition to, and sometimes in place of, primary care physicians. This strongly suggests that any national program to maintain or improve access to rural health care should allow for primary, inpatient, and emergency coverage by midlevel providers. Ongoing research efforts seek to identify the effects of substituting midlevels for physicians, but when the choice is between a midlevel provider and no provider, as can be the case in remote hospitals, the midlevel wins every time.

Long-term care also factored in many community decisions to convert to a MAF, which can realize greater economies of scale by sharing personnel and expenses with local nursing homes, further stabilizing both entities. The implications for other CAH's are similar, given the high proportion of elderly in most rural areas nationwide and the desire to provide quality long-term care in rural communities.

In 1995, the U.S. Government Accounting Office studied the cost to Medicare for treating beneficiaries at MAF's versus full-service hospitals under the prospective payment system. Medicare costs at MAF's were on average lower than if the patients had been treated at a full-service rural hospital and substantially lower than if they had been treated at urban hospitals. These costs reflected a variety of primary and emergency care, as well as inpatient and outpatient procedures.

Data and Methods

Data for Montana telemedicine were collected in cooperation with Eastern Montana Telemedicine Network (EMTN) based in Billings. Uses of the system ranged from mental health and medical consults to continuing education for hospital employees and meetings scheduled by community groups. Data were collected from each of the seven outlying hospitals in the system between 1993 and 1998, and contained between 3 and 6 years of data for each of the sites for a total of 33 consult years. The number of consults in a year ranged from only 2 in one small community to 382 at a well-established mental health facility. The participating hospitals varied widely in both size of population served and distance from Billings.

For each use of the interactive video system, information recorded included length, time, and date of the telemedicine consult; location of each participant; and general category of use. Over the life of the EMTN, mental health has been the most common use of the system. For this reason, mental health services, consisting mainly of consultations between patients in outlying areas and psychiatrists in Billings, were used to determine rate of use. Per capita use is the total number of uses as a percentage of the eligible population, or the number of the hospital's service area population who were likely to need mental health care. In mental health needs assessment, statistics such as age, income, sex, and marital status can be used to predict the number of residents in a given area who may need mental heath care. Per capita use of the telemedicine system was regressed upon a nonlinear specification of the use rate as a function of distance from Billings and length of program. The expected sign on both the distance and program year variable was positive.

Use of the Eastern Montana Telemedicine Network

The Eastern Montana Telemedicine Network (EMTN) has been operating for nearly 6 years and provides interactive video connections to seven communities throughout eastern Montana. The spoke sites are connected to one another and to the hub site in Billings by a dedicated fiber-optic cable and are equipped with interactive video and audio capability. Like many telemedicine programs, the EMTN was initially established with funds obtained via Federal grant. However, since expiration of the original 3-year grant, the network has been operated principally by nonprofit Deaconess Hospital.

Using data that track each use of interactive video on EMTN, a study estimated the cost savings to patients who used the network as a substitute for traveling to the nearest mental health site (Heggem). The averted cost estimates reflect actual travel expenses that were saved as well as the opportunity cost of the patients' time (see "Data and Methods"). Averted costs per year ranged from $268 at one spoke site to $51,283 at another. However, this should be viewed as the lower end of possible benefits, since it only takes into account the value of this telemedicine consult to the individual. A complete accounting of the benefits from a telemedicine network would need to reflect other uses in addition to interactive video for mental health consults, as well as the benefits to a community if local health care services are maintained or enhanced.

The same study also explained variations in per capita use of the network at each of the telemedicine sites. Many factors could affect the rate at which a community uses telemedicine resources, including distance to alternative care and the number of years a site has been in operation. Both of these factors were tested. Telemedicine becomes a more attractive treatment method as the distance to alternative care increases. As a program gains the confidence of local users, use of the system should increase. The analysis bore out both hypotheses. Elasticity measures, which compare the percentage change in one variable to the percentage change in another, indicate that a 10-percent increase in either distance or longevity of the telemedicine program resulted in a comparable 10-percent increase in the per capita use rate. These increases in per capita use rates may be attributed to both a shift by present users toward local treatment (versus care sought in Billings), as well as an increase in the total number of patients who have decided to seek care (in response to lower time and travel cost).

Conclusions

The benefits of changing the delivery methods of rural health care vary with the size and location of a community, distance from alternative health care services, attributes of existing area health care services, and community demographics. The combination of services that makes economic sense for one community may not be cost-effective or deliver the same level of benefits to a second community. Rural health care policy must adjust to needs of different communities; current changes to the Federal legislation that allow Medicare reimbursement for patients using limited-service hospitals and telemedicine are a start.

MAF's in Montana appear to have increased access to and reduced the cost of emergency and primary care in frontier rural communities. However, research on MAF's has not attempted to address possible differences in the quality of care. Research is urgently needed on methods to measure changes in quality and whether limited-service hospitals affect quality. This research should also include a more indepth analysis of factors that demonstrate the need for improved access to rural health care. What should determine "critical access"— mileage from health care, demographic indicators such as percentage of elderly, level of use, or some other measure?

To determine which combination of services (for example, full-service hospital, limited-service hospital, and/or telemedicine) makes sense for rural communities, analysis must determine the value of health care innovations in the context of other health care options and interfaces. For example, whether telemedicine makes good economic sense for rural communities may be influenced by the degree of "cost sharing" with other telecommunications services.

Often, evaluations of telemedicine and limited-service hospitals are limited to their effects on the financial position of the facilities involved, along with demonstrating clinical effectiveness of procedures. While these are certainly important issues, this seems a very narrow view of determining the full value of these technological and institutional changes. It is important to remember that telemedicine or CAH's are not so much products in themselves as they are a method for delivering the product of health care. The value of telemedicine or limited-service facilities, especially in rural areas, should take into account how they affect the behavior of consumers (that is, whether they alter where and how often residents seek care) and their impacts on the overall health of rural communities.

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Alexandra Enders and Tom Seekins

Telecommunications Access for Rural Americans With Disabilities

People with disabilities may be inadvertently excluded from rural community life unless telecommunications access—economic, social, and physical—is addressed and ensured locally. New telecommunications policies are committed to the inclusion of people with disabilities. However, policy alone cannot ensure equitable access. Grassroots understanding is needed to define access in telecommunications and to determine how access can inform development activities.

Since the invention of the telephone, people with disabilities that affect hearing or speech have been concerned about access to telecommunications. As telecommunications have become even more important in recent years, concerns have escalated and broadened to include other disability groups as well. These concerns are not just rural issues, but they will have a disproportionate effect on rural citizens. In urban areas, there are likely to be more, better organized watchdogs looking after disability access issues; in rural communities, people with disabilities may be inadvertently excluded from participation in both economic and social life before local people recognize the relevance of telecommunications access issues.

Disability raises an additional issue in telecommunications discussions—physical access—which will be discussed later in this article. There are issues in telecommunications that could significantly impede both physical and economic access for people with disabilities living in rural areas. In the 1992 Rehabilitation Act amendments, Congress declares that "disability is a natural part of human experience" and that "individuals with disabilities constitute one of the most disadvantaged groups in society." "Millions of Americans have one or more physical or mental disabilities and the number of Americans with such disabilities is increasing," Congress asserts, and "the goals of the Nation properly include the goal of providing individuals with disabilities with the tools necessary to make informed choices and decisions; and achieve equality of opportunity, full inclusion and integration in society, employment, independent living, and economic and social self-sufficiency, for such individuals" (P.L. 102-569). Rural telecommunications is a very important tool for achieving these national goals.

Many Rural Disability Issues Are Common Rural Issues

Disability-related access and services can be readily incorporated into the new telecommunications infrastructures. Telecommunications legislation, as well as the civil rights protections described later in this article, advocates integrated and accessible systems that work for all members of the community. Recognition that an accessible environment reduces the negative effects of a disability is increasing. In the physical environment, ramps make it easier for many people—from couriers with hand carts to parents pushing baby strollers—to enter a building. The telecommunications industry is pursuing similar electronic on-ramps, built just as transparently and with as wide a range of potential users.

Incentives for incorporating disability-related access issues into infrastructure and service planning are increasing. Legislation is beginning to ensure that telecommunications products sold in the United States will incorporate access features useful to a wide range of people and be compatible with special equipment. For example, the Television Decoder Act of 1990 (P.L. 101-431) requires all new television sets with screens 13 inches or larger to have built-in decoder circuitry to display closed-captioned televison transmissions. Previously, an individual needing captions displayed on the TV screen had to buy a $200 set-top box. Today, when you need closed captioning,

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you simply enable a feature already built into a product you own; you do not have to buy a costly add-on unit. After the law was passed, market forces drove the chip cost to less than 50 cents per TV. Telecommunications equipment and customer premise equipment are slated to operate with transparent access already built in.

Access Is Both Physical and Economic

Access, as in "universal service" or "universal access," in telecommunications is generally understood to be economic. With disability, access is generally understood to be physical. However, access is inextricably an economic and a physical issue. Economic access is crucial to people with disabilities, since they are poor in disproportionately high numbers, and improving physical access may have economic costs. Physical access is more obvious, but it may be overlooked. If a distance-learning center in a small-town high school is in a room on the second floor, a person who cannot climb stairs may have no access to the educational programs on the network.

Physical access issues also confound people who have difficulty seeing a visual display or hearing the words of a spoken menu in an automated answering system. Graphical user interfaces (GUI) have unintentionally shut out people who use a screen reader with voice output to read a display monitor. It also frustrates people with slow online connections, sluggish computers, or small screens. Complex displays on telecommunications equipment are confusing for people with cognitive disabilities. Manipulation of control buttons is also a part of physical access. Specific challenges are being addressed both by mass market companies and through the use of specialized equipment customized to the needs of an individual. For example, someone without hands can use speech input software as an alternative to a keyboard.

Access is also a social sense of place and belonging. When community members are assembling upstairs for the evening's program in a distance education center at the high school, it is exclusionary to simply link up from a first floor room the person who cannot climb the stairs. Program developers must design technology and its applications to allow everyone the same choices in use. It is surprising how often access is overlooked until the telecommunications equipment has been installed and service begun. Then, no resources remain for retrofitting the access that could have been inexpensively built into the original installation.

Issues of choice are paramount. If an individual **wants to** tie into the community meeting from his or her home, telecommunications may be able to facilitate that connection. But if physical inaccessibility forces the person into the **sole option** of a cyberconnection, real world connections that are at the root of rural community life are lost. These isolating situations are happening in rural schools from Kentucky to Montana. Even a high school student who has legal redress for such inequitable treatment in the school day is not likely to sue for access because that will only separate them further from their rural community. Instead of making waves, they will make do.

Cyberconnections enhance community life only when they provide a range of viable options, not forced segregation because of disability, gender, or race. The underlying civil rights issues may be subtle, but they are essential to equity and participation.

Geography of Rural Disability

Disability and rehabilitation are a significant, though often overlooked, part of the complex rural American situation. Rural Americans account for a greater proportion of chronic disease and disability than urban populations, but have fewer services or resources to meet their needs. J. M. McNeill estimates as many as 51 million people with some disability in the United States, 25.2 million people with a severe disability (table 1). The 12.5 million people with disabilities who live in nonmetro areas make up a higher proportion (23 percent) than the people with disabilities who live in metro areas (18 percent). McNeil classified over 6 million of these nonmetro people as reporting a severe disability (table 1).

The rate of disability in rural areas is disproportionately higher for several reasons. First, many rural occupations (mining, logging, farming) are among the most physically dangerous and produce high rates of injury that can lead to disability. Second, the proportion of older Americans in rural areas is higher than in urban areas, and rates of disability increase with age. Third, better educated individuals tend to leave rural areas for employment in cities. This migration pattern leaves a higher proportion of less educated people working at dangerous occupations, potentially contributing to the higher injury rate. For example, some of these individuals may not be able to read and follow complex safety information. Fourth, medical and other support services that may prevent disability are less available in rural areas. Fifth, the environmental infrastructure (such as public transportation, access to buildings) is less developed in rural areas and may contribute to reported limitation / disability. And finally, poverty is highly associated with disability, and poverty rates in rural areas are disproportionately high, equivalent to those found in our Nation's central cities.

Rural Disability and Rehabilitation

Providing rehabilitation services to individuals with disabilities in rural areas presents special problems. National surveys of adults with disabilities, rural independent living centers, and rehabilitation hospitals serving rural areas indicate limited resources and limited access. For example, vocational rehabilitation counselors reported

Table 1

Geography of disability in America, 1995

Nonmetro areas have greater shares of people with disabilities and with severe disabilities than do metro areas

Population categories	Disability		Severe disability	
	Estimated number	Percent	Estimated number	Percent
Metro counties:				
Central, 1 million population or more	21,141,448	17.83	10,526,552	8.88
Fringe, 1 million population or more	1,827,049	17.87	909,711	8.9
250,000-999,999 population	11,452,952	19.33	5,702,552	9.62
Fewer than 250,000 population	4,103,599	19.67	2,043,232	9.79
Total	38,525,048	18.44	19,182,047	9.18
Nonmetro:				
Counties with urban areas—				
20,000 population or greater, adjacent to metro	2,108,069	21.07	1,010,892	10.1
20,000 population or greater, not adjacent to metro	1,413,286	20.55	677,718	9.86
2,500-19,999 population, adjacent to metro area	4,122,080	23.74	1,976,688	11.45
2,500-19,999 population, not adjacent to metro area	3,250,697	24.32	1,558,819	11.66
Completely rural counties—				
Fewer than 2,500 population, adjacent to metro area	672,115	25.34	322,309	12.15
Fewer than 2,500 population, not adjacent to metro area	976,587	26.56	468,311	12.74
Total	12,542,834	23.3	6,014,737	11.17
U.S. total	51,067,882	19.44	25,196,784	9.59

Note: Data reflect people of all ages living in both community and institutions who are unable to perform one or more activities, or as having one or more specific impairments, or as a person who used a wheelchair or who was a long-term user of crutches, a cane, or a walker. However, this number does not directly reflect restriction in participation in the community nor recognize the impact of the environment as a causal factor of disability now highlighted by the World Health Organization.

Source: Estimates for 1995 calculated by RTC: Rural based on J.M. McNeil, *Americans with Disabilities: 1991-2*, and data from the Survey of Income and Program Participation, 1993.

significantly more problems, but fewer resources, for helping people with disabilities find employment in rural areas. Like employment, independent living for many rural persons with disabilities in rural areas is undercut by severe isolation, scarce health and human services, widespread inaccessibility, and limited means to obtain social services. In addition to these problems, core independent living (IL) services (information and referral, IL skills training, peer counseling, and individual and systems advocacy) are available in only about 53 percent of nonmetro counties, compared with 81 percent of metro counties.

Generally, rehabilitation methods and procedures have been developed for urban environments, with professional training and experiences based in urban service models and concepts. Therefore, viable approaches to rehabilitation in rural areas are often limited by the assumption that appropriate rehabilitation service delivery is contingent on the availability of traditional resources and urban environmental features, such as buses, hospitals with specialty services, and multiple social service agencies. While urban models of IL services are relatively well established, they may not easily apply to rural areas. For example, programs may have to serve areas significantly larger than one contiguous community (that is, city and surrounding suburbs) because of the sparse rural population. That poses great difficulty in developing local community identity and support. Similarly, it may be extremely difficult for people with disabilities to come together to manage programs or participate in peer groups.

The Promise of Telecommunications

Many policymakers and advocates for telecommunications argue that recent advances in technology will go a long way to solving the age-old problem of distance for rural residents. This assumes widespread access to telecommunications. However, recent analyses show that people in rural areas, especially those with low incomes—and people with disabilities are often poor—are the least likely to have access to such technology (McConnaughey, Nila, and Sloan; McConnaughey and Lader).

High-tech solutions are alluring, but the reality is often ambiguous. We need to assess and systematically monitor the availability of, access to, and use of telecommunications technology by people with disabilities and those who serve them. Such data will clarify important ques-

Recent Legislation on Telecommunications and Disabilities

Telecommunications Act of 1996 (P.L. 104-104)
SEC. 255. [47 U.S.C. 255] ACCESS BY PERSONS WITH DISABILITIES.

(a) DEFINITIONS—As used in this section—

(1) Disability—The term ''disability'' has the meaning given to it by section 3(2)(A) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102(2)(A)).

(2) Readily achievable—The term ''readily achievable'' has the meaning given to it by section 301(9) of that Act (42 U.S.C. 12181(9)).

(b) MANUFACTURING—A manufacturer of telecommunications equipment or customer premises equipment shall ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities, if readily achievable.

(c) TELECOMMUNICATIONS SERVICES—A provider of telecommunications service shall ensure that the service is accessible to and usable by individuals with disabilities, if readily achievable.

(d) COMPATIBILITY—Whenever the requirements of subsections (b) and (c) are not readily achievable, such a manufacturer or provider shall ensure that the equipment or service is compatible with existing peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities to achieve access, if readily achievable.

(e) GUIDELINES—Within 18 months after the date of enactment of the Telecommunications Act of 1996, the Architectural and Transportation Barriers Compliance Board shall develop guidelines for accessibility of telecommunications equipment and customer premises equipment in conjunction with the Commission. The Board shall review and update the guidelines periodically.

(f) NO ADDITIONAL PRIVATE RIGHTS AUTHORIZED—Nothing in this section shall be construed to authorize any private right of action to enforce any requirement of this section or any regulation thereunder. The Commission shall have exclusive jurisdiction with respect to any complaint under this section.

Workforce Investment Act of 1998 (P.L. 105-220; HR 1385)
Title IV Rehabilitation Act Amendments of 1998

(b) ELECTRONIC AND INFORMATION TECHNOLOGY REGULATIONS—Section 508 (29 U.S.C. 794d) is amended to read as follows:`

SEC. 508. ELECTRONIC AND INFORMATION TECHNOLOGY.

(a) REQUIREMENTS FOR FEDERAL DEPARTMENTS AND AGENCIES—

(1) ACCESSIBILITY—

(A) DEVELOPMENT, PROCUREMENT, MAINTENANCE, OR USE OF ELECTRONIC AND INFORMATION TECHNOLOGY—When developing, procuring, maintaining, or using electronic and information technology, each Federal department or agency, including the United States Postal Service, shall ensure, unless an undue burden would be imposed on the department or agency, that the electronic and information technology allows, regardless of the type of medium of the technology—

(i) individuals with disabilities who are Federal employees to have access to and use of information and data that is comparable to the access to and use of the information and data by Federal employees who are not individuals with disabilities; and

(ii) individuals with disabilities who are members of the public seeking information or services from a Federal department or agency to have access to and use of information and data that is comparable to the access to and use of the information and data by such members of the public who are not individuals with disabilities.

tions: Who has access to what types of telecommunications? How are telecommunications used? What are the obstacles to access and use? Who needs better access? What type of access is needed and under what conditions? Assessing current rural adoption of, and access to, telecommunications may help refine policy and practice in order to increase use.

Legal Protections for Access

The Americans with Disabilities Act of 1990 (ADA , P.L. 101-336) provides civil rights protections to individuals with disabilities similar to those provided on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity in public accommodations, employment, transportation, State and local government

services, and telecommunications. Two sections are specific to telecommunications: Section 401, telecommunications relay services for hearing-impaired and speech-impaired individuals; and Section 402, closed-captioning of public service announcements. In addition, several interpretations maintain that web sites offered not only by State and local governments but also by "places of public accommodation" (that is, businesses catering to the public) have a requirement and responsibility to be accessible to people with disabilities. For example, "covered entities that use the Internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means as well" (Patrick).

The Telecommunications Act of 1996 has several references to disability access. The most important, Section 255, requires that "manufacturers of telecommunications equipment or customer premises equipment shall ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities, if readily achievable." Likewise, "a provider of telecommunications service shall ensure that the service is accessible to and usable by individuals with disabilities, if readily achievable." In addition, Section 251 notes, "Each telecommunications carrier has the duty . . . not to install network features, functions, or capabilities that do not comply with the guidelines and standards established pursuant to section 255 or 256."

The Workforce Investment Act of 1998, Chapter IV, Section 508 (see "Recent Legislation on Telecommunications and Disabilities") clarifies the responsibilities of Federal agencies for accessibility in electronic and information technology. This includes accessibility both for Federal employees and for individuals with disabilities who are seeking information or services from a Federal agency. Though these principles have existed in various forms since the 1986 Rehabilitation Act Amendments, the 1998 law provides for standards development and enforcement protocols.

Access and Equity

Historically, telecommunications has focused on equity through economic parity (universal service), while disability equity was addressed with transfer payment schemes (for example, Social Security). Advances in technology raised expectations and possibilities for both telecommunications services and the inclusion of people with disabilities in mainstream society. The broadened environmental/contextual metaphor of the information highway is a good fit with the focus of modern disability politics. The old view—seeing the "cripple" as an isolated homebound entity without context—is as archaic as looking at a plain old black rotary dial telephone and trying to imagine an interactive information kiosk.

Where does disability access, particularly rural disability access, fit into the converging and rapidly changing information highway? The regulatory structures that have historically provided rural areas with equitable access (such as rural electrification) are being redefined, especially regarding access to universal service funds and infrastructure subsidies. The 1996 Telecommunications Act authorizes more discounts and subsidies than there are universal service funds available in existing formulas. Recognizing that modern telecommunications is now a necessity that should be accessible to all, these discounts focus on urban/rural lower income communities. Rather than continuing to dispute the limits of the expanded universal service programs, some major telephone companies have added a monthly fee on all customer accounts to support the e-rate discount programs for schools, libraries, and rural nonprofit health care providers. Subsidized text telephones (TTY's, TDD's, TT's), telephone relay services (TRS), and communication assistants (CA) have become an integral part of telephone access for people with hearing and speech disabilities. Will subsidized terminals and peripherals become part of Internet access? Will the additional software and hardware needed by a person with a disability be subsidized when web access becomes a basic right? What will be included in the new definition of POTS (plain old telephone service)? It depends on who is making the decisions.

Rural residents (including rural residents with disabilities) need to be good advocates for their place on the information superhighway. People with disabilities in rural areas must contribute to rural telecommunications policy and implementation, both as community members and as watchdogs on disability access. If not, they are at risk of being further excluded from the benefits of technology innovation and information access. Telecommunications is but one component of the "information highway," but is the area most sensitive to public policy planning. Telecommunications is still regulated as a public utility, whereas other information technologies (such as computers, television) are mostly unregulated outside their telecommunications aspects.

At the core of U.S. telecommunications policy is the goal of "universal service"—the idea that all Americans should have access to affordable telephone service (McConnaughey, Nila, and Sloan). Our longstanding national policy of sharing responsibility via cross-subsidization will be reinterpreted as universal service evolves in response to the 1996 Telecommunications Act and telecommunications advancements. Rural interests focus on which services will be included in universal service, who will pay for these services, which rural places and institutions will receive support, and how much support they will receive.

Key Developments in Telecommunications Access for Individuals with Disabilities: Final Report of the Telecommunications Access Advisory Committee, January 1997, Section 2

Barriers to Telecommunications and Design Solutions

Since the early 1970's, several telecommunications companies have initiated and supported the development of a number of access technologies. The application of Baudot technology (both teletypewriter hardware and the protocol) to text terminals for deaf, hard-of-hearing, and speech-disabled users, and its dissemination, was a principal focus of their efforts in this area. In addition to general initiatives, some of these companies provided case-by-case custom support for telecommunications functions for people with disabilities, including special assemblies, such as on-hook/off-hook switches that could be controlled by light touch, puff and sip, and electronic environmental controls. These products enabled many persons with disabilities to live more independently. The Telephone Pioneers published and distributed the first compendium of telecommunications accessibility tools known as the "Green Book."

In the late 1970's, consumers began to take their concerns to State utility commissions and legislatures. The State of California took the lead by assessing a line charge to finance the lending of TTY's. This program was later extended to other specialized customer premises equipment used by people who are hard of hearing as well as those with speech disabilities, and those experiencing other problems with telephone access.

In the 1980's, a number of telecommunications companies began efforts to maximize access for persons with disabilities. First, they participated in State equipment distribution programs for people with disabilities. Second, many companies participated in the initial efforts to establish telecommunications relay services (TRS). Finally, several companies initiated research in speech recognition technology that would offer new input and output opportunities for people who had speech, vision, and physical limitations.

By the 1980's, telecommunications and customer premises equipment had become much more diverse. Some of the new technologies improved accessibility and offered new functionality. With the diversity, however, came a new array of access problems. For example, the proliferation of facsimile (FAX) created a new barrier to people with low vision or blindness. At the same time, ongoing problems with access to the voice network led deaf individuals to advocate for telephone relay service in their States and ultimately nationwide, through Title IV of the Americans with Disabilities Act (ADA).

As the convergence of telephone, computers, and television technologies began to escalate in the late 1980's and early 1990's, individuals with disabilities began to realize both the tremendous potential of technology and the potential for setbacks in accessibility. Of particular concern was the impact of these technologies on employment and participation in the mainstream of technology. For example, the marriage of computers and networks brought the graphical user interface, an inaccessible interface for people who are blind, into the world of telecommunications, extending its importance as a tool in the workplace.

Developing accessibility guidelines for the new generation of telecommunications and customer premises equipment poses a series of issues for both the industry and individuals with disabilities. For example, with the rapid pace of technological innovation within the telecommunications industry, individuals with disabilities are concerned that new technologies be accessible so that they can compete in the workplace. Moreover, as technology becomes commonplace in the American lifestyle, individuals with disabilities need to know if they will be able to use such equipment, or if it will be usable with specialized customer premises equipment.

Legislative History

Prior to the 1980's, little had been done by State or Federal legislatures to address the needs of individuals with disabilities to use telecommunications equipment. Starting in the early 1980's, some States developed programs for the provision of telecommunications relay services and the distribution of specialized customer premises equipment, such as text telephones (TTY's), telebraille machines, and artificial larynxes.

The first important step in the development of a national telecommunications policy for persons with disabilities was the Telecommunications for the Disabled Act of 1982. This law expressly allowed States to require carriers to continue providing subsidies for specialized equipment needed by persons with impaired hearing, speech, vision, or mobility.

In 1986, Congress continued to recognize the importance of providing access to information technology when, in Section 508 of the 1986 Amendments to the Rehabilitation Act, Congress directed Federal agencies to limit their purchases to information technology that is accessible or could support accessibility.

In July 1990, the Americans with Disabilities Act (ADA) was signed into law. The ADA was the first comprehensive civil rights law to prohibit discrimination against persons with disabilities in employment, State and local government programs, places of public accommodation, transportation, and telecommunications. Title IV of the ADA mandated the establishment of a nationwide telecommunications relay service (TRS) by July 26, 1993.

National Information Infrastructure (NII)

The development of an advanced information and communications infrastructure that serves the needs of the public and private sectors is a priority for the Clinton administration. The NII initiative was launched in September 1993 by Vice President Albert Gore and Secretary of Commerce Ronald H. Brown with the release of *The National Information Infrastructure: Agenda for Action*. Federal support has been targeted to insuring accessibility and affordability, with the aim of preventing the United States from evolving into a nation of information "haves" and "have nots." The administration is committed to developing a broad, modern concept of universal service—one that would emphasize giving all Americans who desire it easy, affordable access to advanced communications and information services, regardless of income, disability, or location. Through public and private investment, America's information infrastructure is evolving into an interconnected network of networks, allowing us to share information and to communicate as local, national, and global communities. For more information on the NII: <http://nii.nist.gov/>

There are contradictory and even conflicting assumptions in existing and emerging rural telecommunications policy. For example, the potential for telecommunications to overcome the barriers of distance in health, education, and business is repeatedly cited to justify development of information infrastructure. Yet, it will always cost more to deliver telecommunications in rural areas. This forms the basis for establishing that specific deserving entities need subsidies, which in turn can provoke undesirable competition among special interests.

One such basic disconnect between policy and rural practice is telecommunications discounts for rural health care providers, for which only nonprofit organizations are eligible. Many rural communities are served by a single physician or small group practice, which though marginally profitable, does not qualify as a not-for-profit entity. This could worsen the problem of retaining physicians in rural health care. The policy may appear sensible from a national perspective, but not to a small-town doctor's patient. The absence of subsidy creates disincentives for the physician to seek disability-related information or consultation online. Practical policy solutions may have to originate at the State or county level to reflect rural conditions. However, infrastructure policies may require more centralized coordination and monitoring, and may even need to look outside the telecommunications sectors to develop synergy and increase efficiency.

Cross-subsidization in public utilities is being subtly transformed by a more competitive framework. This is obvious in the privatization of the electric power industry, and in the new competitiveness and open participation encouraged in the 1996 Telecommunications Act. The power shifts will be more than metaphorical. Unregulated Internet services (such as Internet telephony) are infringing on the profits of regulated telecommunications infrastructure providers, significantly challenging the economic models and basic assumptions underlying the common carrier paradigm that has been in place for 60 years. For example, long-distance voice connections on the Internet are considerably less expensive than traditional phone calls; additionally, Internet service providers do not currently pay into the universal service fund because they are not "common carriers." Cross-subsidization has played a major role in ensuring that rural Americans can depend on affordable telephone service as an essential part of everyday life. Advanced telecommunications services are the economic lifeblood of modern communities, but they are not available in all locations. The breadth of equity issues in rural telecommunications is beyond the scope of this article. Suffice it to say that emerging models for addressing access, affordability, and comparability are being hotly debated.

Conclusions

While the 1996 Telecommunications Act is a powerful first step in ensuring accessible products and services, it is still only a technology fix. The larger question of how access—economic, physical, social, and environmental—is defined and who has a voice in defining it is especially pressing with regard to rural telecommunications access for people with disabilities.

Research and policy analysis has investigated national telecommunications policy for persons with disabilities (National Council on Disability), but not from a specifically rural perspective. Telecommunications applications in business, education, and health care are often cited as powerful rural development tools. But the intersection of economic development and disability services like vocational rehabilitation is just now being studied. Despite the fact that the word "rural" and the word "disability" are both frequently listed in the groups of people whose needs should be specifically targeted in National Information Infrastructure planning (see "National Information Infrastructure"), they appear to be regarded as discrete groups with little if any overlap.

In order for people with disabilities in rural America to benefit from innovation, disability-related issues need to infuse all aspects of rural telecommunications applications—economic development, employment, community development, education and life-long learning, wellness and health care, recreation, etc. Research and data collection can support integrated policy and program recommendations that remove community barriers and include all rural Americans. But it is grassroots community action that will ensure true and full access is a part of the local telecommunications environment.

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Carolyn C. Rogers

Growth of the Oldest Old Population and Future Implications for Rural Areas

The older population has been growing and aging rapidly, with the fastest growing segment being the oldest old—those 85 and older. This segment of the older population increased 37 percent between 1980 and 1990. The oldest old are more likely to be women, to be in poor health, to live alone, and to be poor. This article examines recent changes in the oldest old population by residence and considers implications for the future.

The older population has been growing and aging rapidly, with the fastest growing segment being the oldest old—those 85 and older. This segment of the older population grew by 37 percent between 1980 and 1990, compared with a 16-percent increase for the population 60 to 84 years old. The oldest old are projected to increase rapidly into the next century, reaching 24 million persons, or one-quarter of the population 60 and over, by 2050. The oldest component of the older population is the most likely to need health care and economic and physical support, suggesting that we need to critically examine changes in that population. The aging of the population is important because eligibility for many major social transfer programs is associated with age.

Awareness of the special needs of the rural elderly has increased along with the increase in size and visibility of the older population. The nonmetro population has grown markedly since 1950 and has been aging rapidly as a result of aging-in-place, outmigration of young persons from agricultural and mining areas, and inmigration of elderly persons from metro areas. The availability of comprehensive health care services often poses problems in low-density, sparsely populated nonmetro communities. Many of these communities are far from specialized medical care, which is concentrated in metro centers.

The aim of this article is to better understand the relationship between changes in the age composition and geographic concentration of the older population and the implications of such changes for current and future rural policy decisions. How important is rural-urban residence in understanding changes in the growth and concentration of the oldest old and how has the importance of residence changed over time? This article examines (1) changes in the age and residential distribution of the older population between 1980 and 1998 across the rural-urban continuum; and (2) the implications of these aging trends for rural community planning, provision of services, resources, and assistance programs.

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Many Nonmetro Regions Gained Population 60 and Older Due to an Influx of Retirees

The older population (see "Data and Definitions") increased by 17 percent between 1980 and 1990 and by 7 percent between 1990 and 1998. The median age of the U.S. population increased from 30 in 1980 to 32.9 in 1990 and 34 in 1998 (table 1), a strong indication of population aging. The nonmetro population is older than the metro population, with a median age of 36 in 1998, compared with 34 for the metro population. The older population accounted for more of the total population in nonmetro counties (18 percent in 1998) than in metro counties (15 percent). The nonmetro share of the older population has grown both from retirement inmigration and outmigration of young adults.

The number of older persons varies from region to region. In both metro and nonmetro areas, the older population is concentrated in the South, with a substantial proportion of the nonmetro elderly residing in the Midwest and the metro elderly residing in the Northeast. The nonmetro

Midwest also has the largest proportion among the regions of its older population age 85 and older, reflecting aging-in-place. The greater concentration of the older population, especially those 85 years and older, in the Northeast and Midwest raises social policy issues for local governments in these areas (Bean, Myers, Angel, and Galle). For example, the oldest old have the greatest need for long-term care services; however, Medicare, which provides significant health insurance coverage, offers only limited coverage of long-term care services.

There is a growing concentration of elderly persons in the Sunbelt States in general, and in several specific retirement areas, including a band of counties stretching from northwestern Arizona, the Ozarks in Arkansas, and central Texas to western North Carolina and eastern West Virginia (Siegel). Growth in nonmetro retirement counties has continued at a rapid pace since 1980, much faster than in other nonmetro counties (Reeder). These rural retirement counties benefit substantially by attracting retirees, as shown by their population growth, increased family incomes and tax bases, greater economic diversification, and reduced unemployment rates. Similar growth is seen for metro retirement areas, with notable increased concentrations in metro counties with climate and recreation amenities as in central and southern Florida.

Many nonmetro regions—such as the Corn Belt, Great Plains, and Southern Appalachian Coal Fields—which depend on farming or mining, and have experienced slow growth and net outmigration, have been aging through the loss of young working-age persons (Fuguitt and Beale). Older persons have remained and become an ever-increasing proportion of the total population in these areas. The changing geographic distribution of the older population has resulted in disparities between community resources and needs, such as medical services, social services, housing, and long-term care. Small rural counties of the Midwest are especially challenged in providing services for the elderly. In addition to the relatively greater demand for services and low tax base, there are special problems of transportation, availability of facilities and resources, and delivery of services associated with the geographic dispersion and isolation of the population (Siegel).

Urban Influence Associated With Growth in the Older Population Across the Rural-Urban Continuum

Counties show wider variation in the proportion of the older population than regions or States. The rural-urban continuum distinguishes counties by population size and type for metro counties and by size of urban population and adjacency to a metro area for nonmetro counties (see "Data and Definitions"). In general, as size of place and proximity to urban areas increase, so does the growth of the older population.

All counties across the rural-urban continuum increased in population age 60 and older between 1980 and 1990 (table 2). Metro counties had a greater rate of increase than nonmetro counties, with the highest rate of increase for fringe counties of 1 million or more population (27 percent) between 1980 and 1990. Among nonmetro counties, the increase in the elderly population was greater for counties with larger urban populations and for counties

Table 1

Age distribution of the older population by metro-nonmetro residence, 1980, 1990, and 1998

The median age increased 4 years from 1980 to 1998

Residence and year	Median	60 and older		85 and older	
		Population	Share of total population	Population	Share of 60 and older population
	Age	Number	Percent	Number	Percent
1980:					
U.S. total	30.0	35,637,048	15.7	2,240,067	6.3
Metro	29.9	25,500,112	15.1	1,574,667	6.2
Nonmetro	30.1	10,136,936	17.7	665,400	6.6
1990:					
U.S. total	32.9	41,857,998	16.8	3,080,165	7.4
Metro	32.6	31,002,048	16.1	2,233,652	7.2
Nonmetro	33.8	10,855,950	19.4	846,513	7.8
1998:[1]					
U.S. total	34.0	42,145,000	15.7	2,928,000	6.9
Metro	34.0	32,465,000	15.0	2,252,000	6.9
Nonmetro	36.0	9,680,000	18.4	676,000	7.0

[1]Does not include the institutional population.

Source: Calculated by ERS from March 1998 Current Population Survey (CPS) data file, and 1980 and 1990 Census of Population, General Population Characteristics, U.S. Summary.

adjacent to metro areas. Thus, both local level of urbanization and metro proximity is associated with growth in the older population. Most likely, the availability of medical facilities and health and social services in nearby metro counties influenced older persons in their residential decisions. Adjacent counties with 20,000 or more urban population grew 18 percent among the population 60 and older (compared with 17 percent for nonadjacent counties), while counties with 2,500 to 19,999 urban population grew 12 percent (compared with 8 percent for nonadjacent counties), and those with less than 2,500 urban population grew 9 percent (compared with 5 percent for nonadjacent counties). Remote, completely rural counties had only a minimal increase in population 60 and older between 1980 and 1990.

Growth of the older population by county type tends to follow the same pattern as in the general population. Urban influence facilitates growth, with retirees seeking both places near urban areas and facilities / resources as well as places with natural or other amenities. Residential differences in county growth patterns are similar for older men and women, with higher percentage increases in the number of women than in the number of men.

While the population 60 and over increased 17 percent between 1980 and 1990, the oldest old increased 37 percent. In 1990, those 85 and older accounted for a larger share of the older population (7.4 percent) than in 1980 (6.3 percent). By 1998, the Census Bureau's population estimates (independent of the CPS) showed an increase of 9 percent over 1990.

Along with the rapid growth of the oldest old, the predominance of women at advanced ages is a key phenomenon. In 1990, 71 percent of the nonmetro population 85 and older was female. The number of women age 85 and older increased more (43 percent) than the number of men (24 percent) between 1980 and 1990. Again, the increase was greater in metro counties. In nonmetro counties, the more rural counties generally had a smaller rate of increase in the oldest old. Older women have much higher poverty rates than older men, comprising 71 percent of the poverty population age 60 and older. At advanced ages, declining health, reduced income, and widowhood may prompt a return to urban centers, where the necessary health and social services are located or where children of the elderly live (Siegel).

Because they have lower death rates, women have a greater survival potential than men at all ages. At each incremental age over 60 years, women comprise a larger share of the population (fig. 1). Women comprise 53 percent of the nonmetro population age 60-64, and 63 percent at age 85 and older. Because women live longer than men, their health and economic status are more vulnerable at later ages. The relative numbers of males and females in the upper ages in nonmetro areas exceed the relative numbers in metro areas. In 1998, 9 percent of older men and 13 percent of older women in nonmetro areas were 85 and older, compared with 7 percent of metro men and 12 percent of metro women.

Table 2

Change in the population 60 and older and 85 and older by residence, 1980-90

Metro counties had a greater rate of increase than nonmetro counties

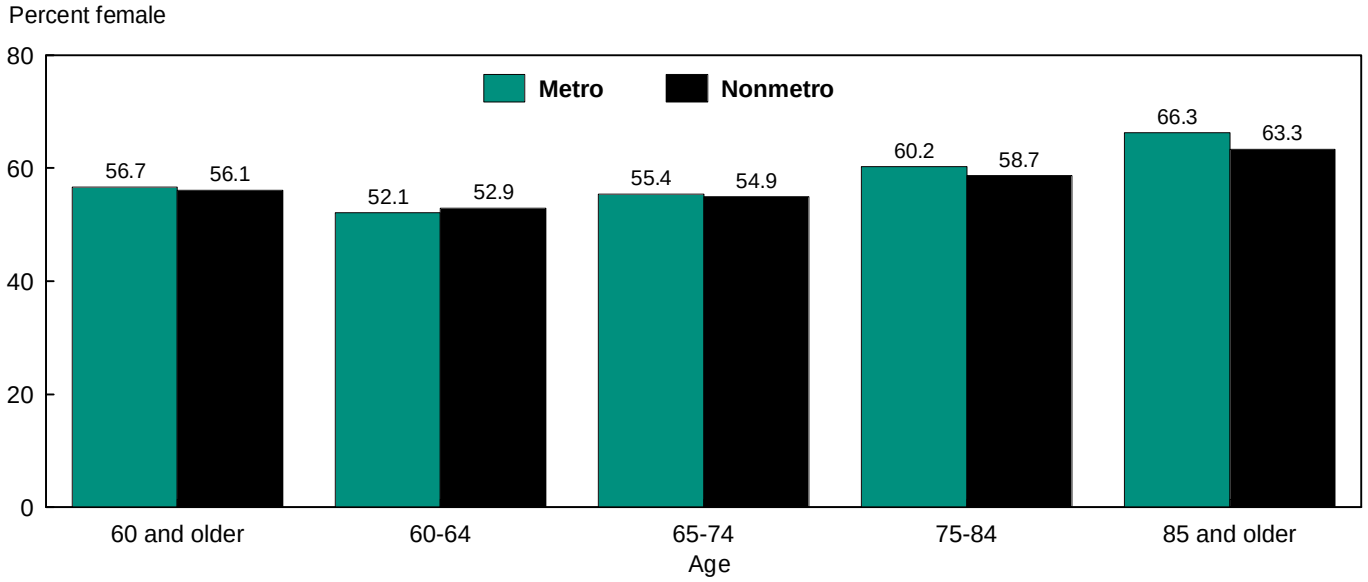
Rural-urban continuum code	Persons 60 and older		Percentage change, 1980-90	Persons 85 and older		Percentage change, 1980-90
	1980	1990		1980	1990	
	Number		Percent	Number		Percent
Total U.S.	35,633,190	41,831,037	17.4	2,192,679	3,003,328	37.0
Metro:						
1 million + population—						
Central	15,522,520	17,997,510	15.9	930,154	1,267,309	36.2
Fringe	1,079,968	1,372,292	27.1	67,822	95,591	40.9
250,000 to 999,999	7,387,220	9,174,773	24.2	440,065	630,159	43.2
<250,000	2,775,078	3,387,093	22.1	173,593	244,933	41.1
Nonmetro:						
20,000 + population—						
Adjacent	1,485,491	1,759,778	18.5	91,627	125,760	37.3
Nonadjacent	918,478	1,073,309	16.9	60,814	80,358	32.1
2,500-19,999—						
Adjacent	2,848,179	3,184,948	11.8	188,358	245,776	30.5
Nonadjacent	2,384,237	2,572,324	7.9	158,657	208,656	31.5
Completely rural—						
Adjacent	473,115	513,948	8.6	30,213	39,678	31.3
Nonadjacent	758,904	795,062	4.8	51,376	65,108	26.7

Source: Calculated by ERS from data from the Bureau of the Census, 1980 and 1990 Census STF4 files.

Figure 1

Older women as a percentage of the population by age and residence, 1998

With advancing age, women comprise an ever-increasing share of the older population



Source: March 1998 Current Population Survey (CPS) data file.

Rapid Growth of Oldest Old Will Affect Planning and Allocating Funds

The aging U.S. population has important implications for future community planning. First, declining health and possible loss of some independence of the elderly can increase their need for health services, financial assistance, housing, and social and psychological support. Second, poverty in old age hits certain subgroups hardest, especially the oldest old, those living alone, and the most rural elderly residents. Special programs may be required to provide financial assistance to the low-income elderly. Third, the preponderance of women at advanced ages and their greater economic vulnerability are important issues in program planning. Several factors—including work history, family roles such as caregiving, marital status, and changes in pension coverage—affect retirement income and the economic well-being of older women (Rogers).

With advancing age, economic well-being declines. Economic status in later life is a cumulative product of economic experiences, involving earnings, savings and spending, and participation in pension, health insurance, and public assistance plans. Economic advantages and disadvantages throughout the life course contribute to a wide economic inequality among the elderly, particularly among the oldest old. Elderly women have higher poverty compared with older men, and older men and women who live alone or with nonrelatives have higher poverty compared with all older men and women. Since a higher proportion of the nonmetro than metro elderly population is 85 and older, and older age among the elderly is associated with a higher incidence of poverty, this becomes a more urgent issue in nonmetro areas. The elderly poor have less access to support services, housing, adequate nutrition, and transportation, and are apt to be less healthy than their wealthier counterparts.

Metro and nonmetro counties differ in population size and density, geographic isolation, road systems, and economic base as well as in the social and economic attributes of the older residents. These characteristics are associated with different needs for health care delivery, transportation, recreation, and access to social services. Access to health care services is a problem for sparsely populated areas. Remote rural areas are less equipped to provide services and programs to meet the needs of their elderly residents. Comprehensive, state-of-the-art medical care and facilities tend to be available only in large urban centers. Traveling long distances to these centers may be feasible only for the younger and more affluent segment of the older nonmetro population.

Farming and farm-dependent communities beset by aging-in-place and the outmigration of young persons face a different set of problems than retirement communities. Many of these areas have experienced the decline and departure of businesses and services, a fall in farm incomes and farm land values, erosion of the tax base, and reduced services for the elderly. Since the elderly in farm-dependent communities tend to be older and poorer than those in retirement communities, they are more dependent on local services (Siegel).

Changes in State and Federal policy will affect rural elders because Social Security, Supplemental Security Income (SSI), and Medicare are a major part of their

Data and Definitions

The older population, or the elderly, are defined here as persons 60 and older, and the oldest old as those 85 and older. This article is based on data from the 1980 and 1990 decennial censuses and March 1998 Current Population Survey (CPS). Estimates from the CPS are not strictly comparable with decennial census figures since the CPS excludes the institutional population. Approximately 5 percent of those 60 and older are institutionalized and this percentage increases with advancing age. Independent estimates by the Census Bureau of the total population age 60 and older in 1998 show 44,565,000 persons, compared with the CPS estimate of 42,145,000, a difference due primarily to noncoverage of the institutional population in the CPS. The shortfall is greater at age 85 and over, where the CPS estimates 2.9 million persons, while the independent population estimates are 4.0 million.

The decennial census provides detailed rural-urban distinctions. This article uses the USDA rural-urban continuum code for 1980 and 1990 to distinguish metro counties by total metro area size and nonmetro counties by degree of urbanization and proximity (adjacency) to metro areas. This yields a 10-part county classification scheme. The four metro categories are (1) central counties of 1 million population or more; (2) fringe counties of 1 million population or more; (3) counties of 250,000 to 999,999 population; and (4) counties of fewer than 250,000 population. The six nonmetro categories are counties with (1) urban population of 20,000 or more, adjacent to a metro area; (2) urban population of 20,000 or more, not adjacent to a metro area; (3) urban population of 2,500 to 19,999, adjacent to a metro area; (4) urban population of 2,500 to 19,999, not adjacent to a metro area; (5) completely rural or less than 2,500 urban population, adjacent to a metro area; and (6) completely rural or less than 2,500 urban population, not adjacent to a metro area.

incomes and also provide critical support for local service providers. Rural communities are limited in public sector capacity and are economically concentrated in a few industrial sectors. Local economic conditions will continue to affect the range of services available to older persons. Issues such as ease of access to services or low-density service provision are critical when considering the nonmetro elderly.

While government programs such as Medicare and Social Security help improve the economic well-being of older people, many vulnerabilities remain. Medicare provides significant health insurance at relatively little or no cost, but offers very limited coverage of long-term care services—whether in the community or in a nursing home—and much of the cost is borne by older people and their families. The need for long-term care will most likely increase with the growth of the oldest old. Although nursing homes serve only about 5 percent of the elderly at any one point in time, they consume the largest proportion of public dollars spent on the elderly.

Furthermore, the growth of the population age 60 and older poses a major challenge to current government programs that support older people, and will raise the costs of Social Security, private pension programs, Medicare, Medicaid, and a host of other services and programs for the elderly. Smaller family size, greater childlessness, and increased rates of divorce mean that many baby boomers will have fewer family resources to turn to in their old age. On the other hand, the economic circumstances of many in the baby boom generation may be better than for present-day older persons at retirement, since greater proportions will have college degrees, formal labor market experience, and pension coverage.

With the approach of the 21st century and the increasing number of older persons, the need to provide services to this growing segment of the population will become more and more acute. The growth in the size of the elderly is associated with a major policy issue—the allocation of public resources. The elderly require a disproportionate level of services and share of the public budget. The combination of a burgeoning elderly population, a relatively small working-age population, and continuing low fertility means that only a relatively small number of persons of working age will be available to provide the services and funds the elderly need. The concentration of persons in the ages where chronic health problems are most common, in combination with the rise in the ratio of older dependents to workers, may well overtax the supply of health and social service workers. Health and social services will need to provide better and more effective care for the elderly with chronic conditions that impair their ability to function independently. And communities will need to tailor services to suit the physical limitations and geographic concentration of older residents.

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Thomas D. Rowley and David Freshwater

Are Workers in the Rural South Ready for the Future?

Widespread prosperity in the South has not benefited everyone. Some Southerners continue to live in poverty, lack adequate education and training, and experience racial inequality. Consequently, those Southerners fare poorly in the current labor market and are positioned poorly for future labor markets. Many live in the region's rural areas. Indeed, one could make the case that there are two Souths—one prospering and ready for the future, another lagging and vulnerable.

After decades as the Nation's economic backwater, the South has risen to prominence. In fact, it's the second fastest growing region of the country. As a result, millions of Southerners are enjoying prosperity and a hopeful future. But all is not rosy. For millions, the future is hopeful but for others it is ominous. To say that the difference is decided by skin color, occupation, education, or place of residence is, obviously, an oversimplification—but not a gross one. Southern Whites still have higher incomes than Southern Blacks. Professionals have more opportunities and security than do blue-collar workers. College graduates earn higher wages than do high school dropouts. And the urban South is, for the most part, better off than the rural South. This article highlights recent research findings on the status of rural Southern workers and their readiness for the future.

What the Future Holds for the Rural South

We know the future will differ from the past. Cotton fields give way to smokestacks. Smokestacks yield to service centers. Service centers may bow to some as-yet-unknown development. The economy, and therefore the life, of the rural South changes. The results of that change—good or bad—will depend largely on how well rural Southerners foresee the change and respond to it. And while no one can predict the exact nature of change or its implications, several trends give strong clues as to its general direction.

Technological Advance

Few trends influence our daily lives as profoundly as that of technological advance—especially computer-based technology. It truly changes the way we live and work. For workers, firms, and regions to exploit technology, they must be willing and able to stay abreast of technology and use it to advantage. While rural areas have historically been slow to gain access to and adopt new technology, recent research suggests that at least some parts of the technology gap are narrowing. A survey of manufacturing firms found "relatively few rural-urban differences in the use of new technology" and that "apparently, there is no longer any substantial rural disadvantage in access to information and specialized knowledge, at least insofar as technology adoption is concerned" (McGranahan). The survey did, however, find one obstacle to technology adoption that is especially prevalent in the rural South: low levels of education.

Service Sector Growth

That the United States, and indeed the industrialized world, has become a service economy is by now cliché. Indeed, in parts of the Nation and in some social circles, it is rare to find anyone that actually produces goods for a living. And the number of service jobs is increasing. From 1991 to 1996, 88 percent of the net new jobs in the Nation were created in service-producing industries. Since nothing suggests an end to this trend, job seekers of the future will find most of their prospects in the service sector.

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The implications for the rural South and its workforce are somewhat ambiguous. The question revolves around jobs and wages. Are service industries likely to locate in the rural South in sufficient numbers? Will they pay attractive salaries? Will they provide full-time employment? Research suggests that the more routine, export-oriented services are not likely to shift to rural areas to take advantage of low-cost labor the way manufacturing did. Their reliance on proximity to markets and/or sophisticated telecommunications infrastructure may prohibit such a move, particularly if rural areas continue to lag urban in gaining advanced telecommunications.

As for wages, research findings are mixed. High-skill producer services do pay attractive wages. The trick will be getting those jobs to locate in the rural South by offering the things that attract such firms—good schools, adequate infrastructure, community services, and the like.

Organizational Restructuring

In response to their changing environment, firms and entire industries are changing the way they do business. Unlike its hierarchical, large-scale, vertically integrated ancestor, the firm of the future will likely be flatter, more flexible, and more focused on niche markets. Not surprisingly, such organizations will need workers who can solve problems, make decisions, work in teams, and adapt to changing circumstances.

The implications for the rural South of such restructuring are less than obvious. They will likely vary greatly by industry and location. One researcher finds that restructuring may slow wage growth but not employment growth in the rural South. In fact, manufacturing employment continues to shift from urban to rural areas despite restructuring of industry and the increased importance of being close to one's suppliers and markets (Barkley).

Globalization

Simply stated, globalization means that barriers to commerce are falling. It means freer markets and freer flowing capital. It means that corporations can buy where they wish, produce where they wish, and sell where they wish. Consequently, it means more choices and lower prices for the consumer. Unfortunately, it also often means lower wages for the worker and increasing vulnerability for workers, firms, and even entire economies. Everyone competes with everyone else.

As for the South, its rural areas have in the past been "safe harbors for the nation's labor-intensive and natural resource-dependent industries." In the global economy, however, these areas and their dominant sectors are growing more vulnerable to competition from lower cost producers in Asia and Latin America (Glasmeier and Leichenko).

Demographic Change

Just as barriers to the movement of goods and services fall, so too do barriers to the movement of people. From 1990 to 1996, 1.6 million more Americans moved from the city to the country than the reverse. Another 227,000 moved to rural areas from other countries. The reasons, of course, vary. Some move to find work, others move to find a higher quality of life, others move to be near family. Whatever the reasons, many rural areas are growing, with great impact on their economic future.

Obviously, growth affects an area directly. More people pay more taxes and need more housing, infrastructure, and services. Less obvious, though no less important, is the effect migration has on the distribution of human capital. The age, education, income, and skills of migrants greatly influence the economy and prospects of both areas—the one getting them and the one losing them.

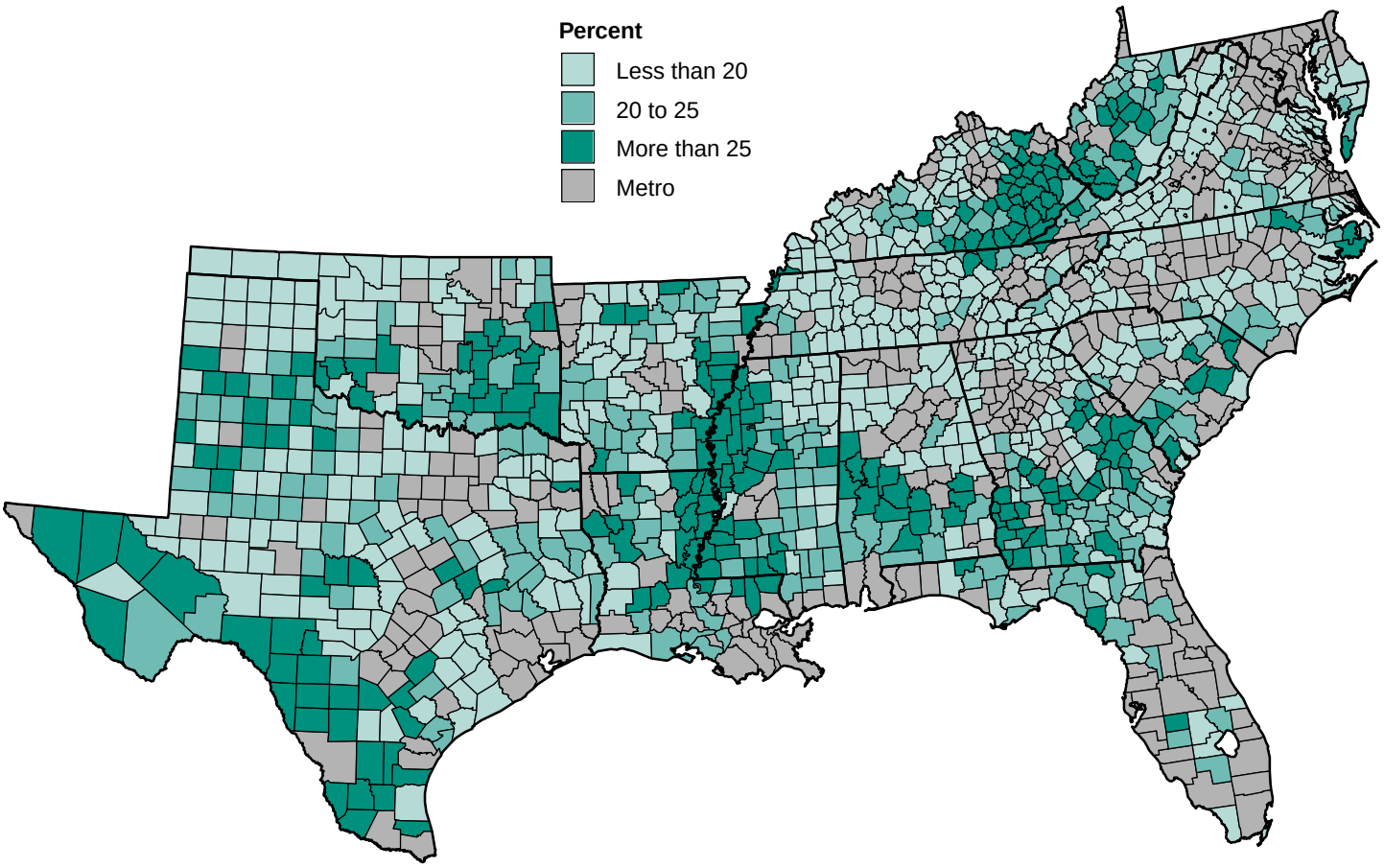
What impacts on human capital will this influx of migrants have on the rural South? Overall, the picture is good. A majority of the net inmigrants is in the early career years and a disproportionate share is in young families. And the "brain drain" (the departure of the more educated) that prevailed in the 1980's has slowed and possibly stopped. High school graduates are now over-represented among those moving into the rural South, and high school dropouts are under-represented. In addition, more college graduates are moving into than out of the rural South, although they are still somewhat under-represented among inmigrants (Nord and Cromartie).

The destination within the rural South of these migrants varies. Most of the net gain goes to counties next to metro areas, but much of it also goes to nonadjacent counties. Counties with natural amenities—lakes, rivers, mountains, beaches, etc.—offer the strongest appeal to migrants, while the poorest areas benefit the least. Net migration to the 443 rural Southern persistent-poverty counties (those that have had poverty rates in excess of 20 percent in each of the last four censuses) remains far below migration to other counties. Worse, during the 1980's, characteristics of migrants to the poverty counties tended to reinforce rather than mitigate economic inequality. Whether that trend is continuing in the 1990's remains to be seen (Nord and Cromartie).

Government Intervention

Government intervention influences the workplace in myriad ways. It affects so many aspects of work, in fact, that describing its various implications for the future borders on the impossible. The implications of one specific intervention—welfare reform—are, however, relatively clear: large numbers of people with scant work experience, relatively few skills, and little formal education will be entering a job market that demands exactly the opposite.

Figure 1
Poverty rate of nonmetro counties in the South, 1995
Pockets of poverty remain across the rural South



Source: Prepared by ERS using data from the U.S. Bureau of the Census Small Area Income and Poverty Estimates, 1995.

Across the Nation, rural areas rely more heavily than do urban on government transfer payments—things such as Social Security, Medicare, and Medicaid. In fact, they comprise one-fifth of rural income as opposed to 15 percent of urban income. And many areas of the rural South—Appalachia, the so-called "Black Belt," the Mississippi Delta, counties in Texas with high concentrations of Hispanics—depend even more on these payments. Obviously, changes in these programs, such as those stemming from welfare reform, will have a tremendous effect on people in the rural South. This is especially true in areas that have few jobs available and few ancillary services, such as childcare and transportation, that are critical for welfare reform to work.

Clearly, these trends point to a future that demands more from workers, firms, and regions. The game is changing—in terms of competitors and in the rules of competition. The days in which the rural South fed itself through cheap land and cheap labor are numbered. Success, if not survival, will require a workforce ready to use cutting-edge technology, ready to take on competitors worldwide, ready to rethink what they do and how they do it.

Shaping the Workforce

Shaping a workforce for the future involves many hands. Together, they provide the nurture, education, experience, and incentives that forge the workforce (as well as footing most of the bill). Unfortunately, the process is hampered in parts of the rural South by its "legacies" of poverty, undereducation, and racial inequality. As a result, readiness is in question.

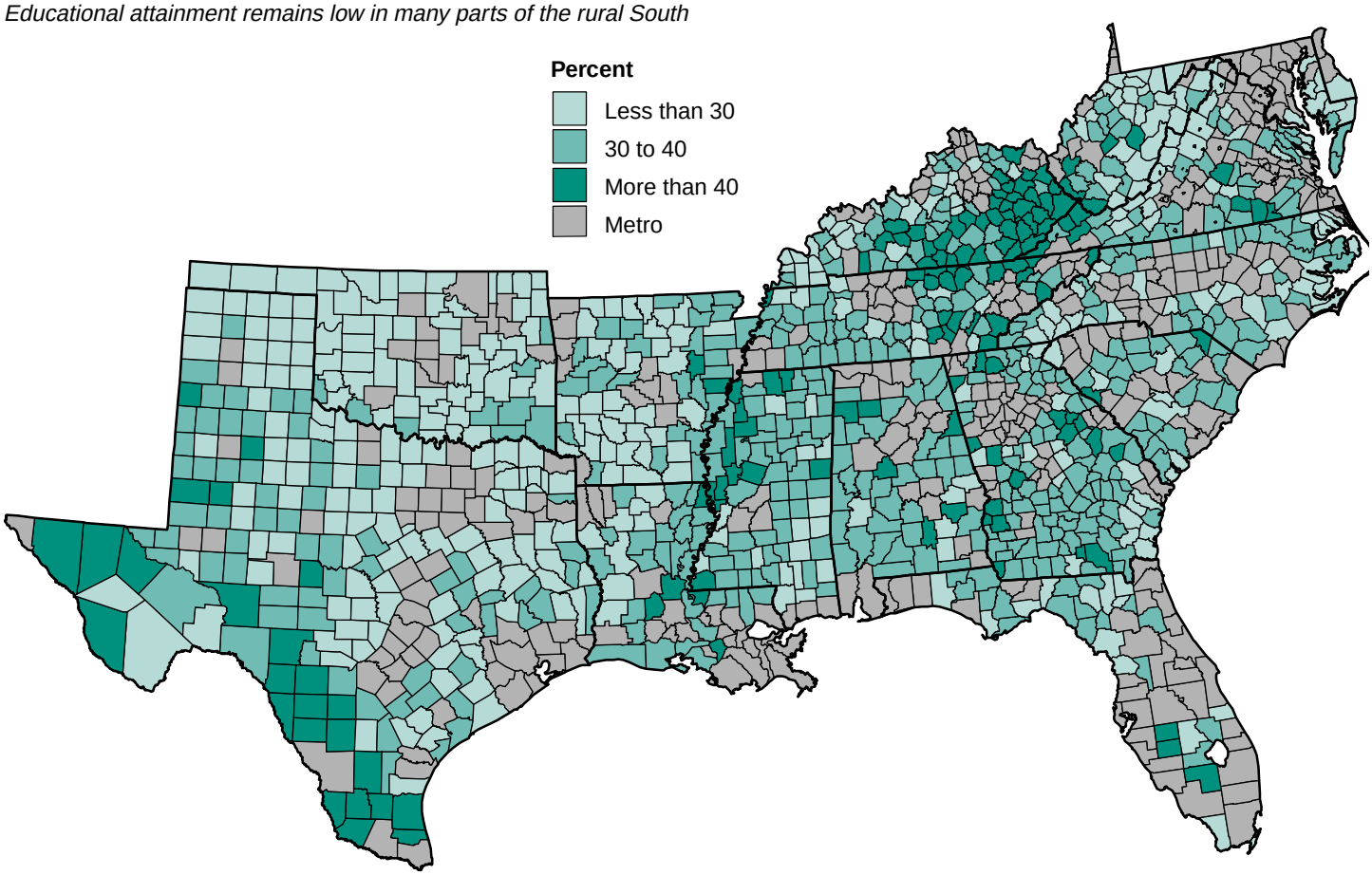
Poverty

The rural South continues to lag the rest of the country in terms of income. In 1997, median household income in the rural South was only 73 percent of U.S. median household income (or $10,000 less per year). Southern rural Blacks and Hispanics fared even worse. Furthermore, income and wealth are "inextricably linked, for it is higher income that gives a family the opportunity to own a house, start a business, invest in education." Unfortunately, "one in five Southern families has essentially no wealth" (MDC, Inc.).

Figure 2

Proportion of working-age persons lacking high school diploma or equivalent in nonmetro counties of the South, 1990

Educational attainment remains low in many parts of the rural South



Source: Prepared by ERS using data from the U.S. Bureau of the Census Summary Tape File 3C, 1990.

But that is only part of the story. By aggregating personal income to the community level, we can begin to gauge its impact on a community's ability to care for its own—to pay for the schools that are so critical, to finance infrastructure, to improve health, and to lower crime. Here again, parts of the rural South stand out in their misfortune. Of 1,006 counties in the rural South, 44 percent (443) are persistent poverty counties and many have poverty rates as high as 40 percent (fig. 1).

Frankly, expecting communities such as these to develop and maintain a workforce that can compete worldwide using the latest technologies and business practices is perhaps unrealistic. Indeed, lacking the resources to develop, they are unable to increase their resources.

Undereducation

Charged with educating and training tomorrow's workforce, local school systems play a crucial role in a region's well-being. Sadly, researchers conclude time and again that education and training in the rural South fall far short. One of the most recent studies found that teachers in the rural South:

- are less satisfied than those in other regions with salaries, resource availability, class size, teaching as a career, and the level of "problems" in the learning environment;
- receive lower pay than teachers in other rural areas; and
- graduate from prestigious universities at lower rates than other rural teachers do (Ballou and Podgursky).

On top of these deficiencies lie those that plague rural schools across the Nation, such as fewer advanced classes, lower teacher salaries, and teachers leading classes outside their major subject. Schools in the rural South appear to suffer twice: once for being rural and again for being Southern (fig. 2).

Not surprisingly, achievement scores for students in the rural South continue to lag national, rural, and urban South averages, as do measures of adult literacy and educational attainment (table 1).

Racial Inequality

In examining the South, one never gets afar from the subject of race. It plays a significant role in the endowments and performance of the rural South. Referring specifically to education and training, one researcher makes the larger case as well: "The presence of a significant Black minority in the region and the legacy of unequal public human capital investments create an environment of unusually large variation in education and training outcomes within the region, and lower levels of attainment and achievement overall" (Gibbs).

Obviously, improving the overall endowment and prospects of the rural South demands reducing long-term racial inequalities (fig. 3).

Is the South Ready or Not?

Of course, the proof of the pudding is in the eating. If we are concerned about the ability of the rural Southern workforce to prosper, we must look not only at factors that shape it, but also at the ability itself—at labor market performance.

The Good News

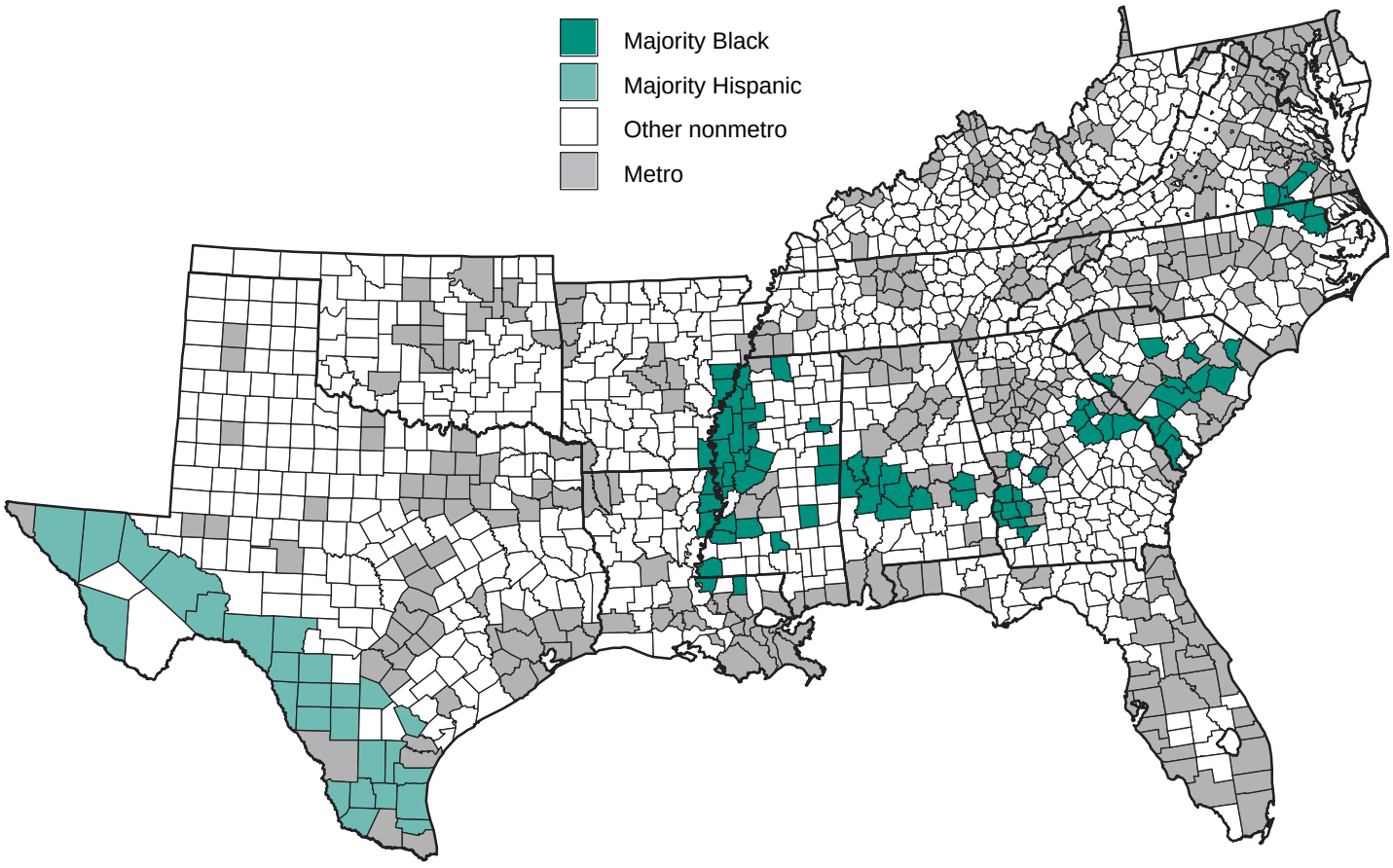
Some workers in the rural South are doing quite well. In a region where manufacturing provides nearly 20 percent of the jobs, more than 25 percent of earnings, and indirectly generates a substantial number of service sector jobs, the actions of manufacturers are critical. And the news on the manufacturing front is somewhat favorable. The recent spate of automotive plants locating in the South (some in rural areas) has brought with it higher skill, higher wage jobs. In fact, research findings indicate that high-skill manufacturing jobs grew faster in the 1970's and 1980's in the rural South than did other, low-skill manufacturing jobs (such as those involved in the making of lumber, paper, and textiles) in which growth was flat (Wojan).

In addition, there are signs that other manufacturers are "upskilling." The ERS manufacturing survey finds evidence that "new technologies are raising the skill needs of rural manufacturers." And as for the South, manufacturers in rural counties with higher levels of education are adopting technology at only slightly lower rates than are firms elsewhere in the country (McGranahan).

Figure 3

Majority Black and majority Hispanic nonmetro counties in the South, 1990

Parts of the rural South have high concentrations of minorities



Source: Prepared by ERS using data from the U.S. Bureau of the Census Summary Tape File 3C, 1990.

Table 1

Measures of educational achievement and attainment

Education lags in the rural South

Item	U.S. average	Urban South	Rural average excluding South
	Rural South score as a percentage of other groups' scores		
Test scores, 1994:			
Math	97	98	96
Reading	97	98	96
Science	97	99	94
Educational attainment, 1998:			
Less than high school	173	173	193
High school graduate	117	119	92
Some college	88	90	85
College graduate	53	51	79

Source: Achievement—National Assessment of Educational Progress in Gibbs; Attainment—1998 March Current Population Survey, from Mark Nord.

In general, higher skills imply higher wages, broader opportunities, and easier access to continued skill development. Thus, higher skilled workers, in the rural South and elsewhere, face a more prosperous, more secure future than those with lower skills. Unfortunately, the rural South still has more than its share of people on the low end of the scale.

The Bad News

The toll that poverty, poor education, and racial inequality take on many workers in the rural South can be seen in three critical dimensions of the labor market—the ability to find work, the ability to earn a living wage, and the ability to advance.

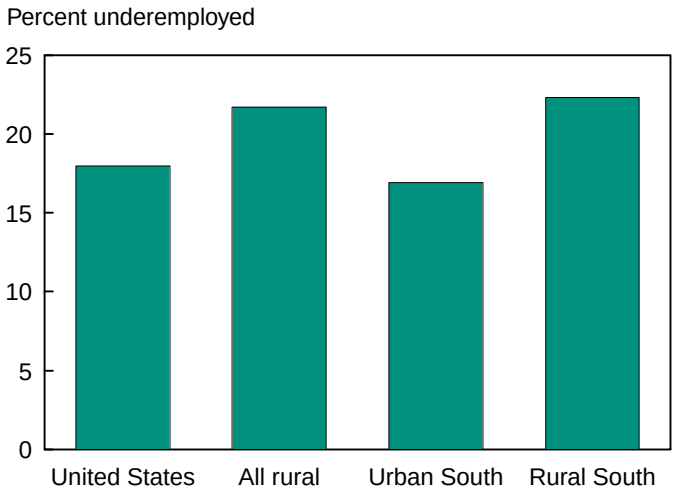
Employment. The unemployment rate is higher in the rural South than in the Nation as a whole, the rest of rural America, or the urban South—but that is only part of the problem. A better measure counts not only the unemployed, but also "discouraged workers" who have given up looking for a job, workers who work less than full-time only because they are unable to find full-time jobs, and the "working poor" who earn less than 125 percent of the individual poverty threshold. On this measure of under-employment, the rural South fares slightly worse than the U.S. rural average, but significantly worse than the urban South and the rest of the Nation (fig. 4) (Jensen and Wang).

Breaking this measure down into its components and examining the performance by race and education sharpens the focus. As expected, education reduces underemployment. The more you have, the better off you are. In fact, over one-third of high school dropouts in the rural

Figure 4

Underemployment in the rural South compared with other groups, 1998

Rural underemployment remains high in the South



Source: Jensen and Wang; March 1998 Current Population Survey.

South were underemployed in 1998, whereas less than 5 percent of college graduates were (Jensen and Wang). Those who do not go to college, on the other hand, are more likely to face periods of unemployment than their college-educated peers and tend to be unemployed for three times longer (Beaulieu and Barfield).

Also as expected, Blacks and Hispanics suffer underemployment at significantly higher rates than Whites. Twenty-nine percent of Blacks in the rural South were underemployed in 1998, compared with 30 percent of Hispanics and 20 percent of Whites (Jensen and Wang).

Wages. Given the South's historic reliance on low wages as a business recruitment strategy, it should come as no surprise that wages per job in the rural South remain well below the national and rural averages—and the situation is not improving. Likewise, manufacturing jobs in the rural South (nearly 20 percent of all jobs) pay only 68 percent of the U.S. average, the same as they did in 1969.

Low wages partly explain the prevalence of the "working poor" in the rural South and the fact that they account for nearly half of all working poor in rural America (Jensen and Wang). Low wages also explain a large part of the underemployment problem in the rural South. Of the 22.3 percent of underemployed people in the rural South, the "working poor" comprise the largest group at 9.6 percent, followed by 6.1 percent working "low hours," 5.5 percent "unemployed," and 1.1 percent "sub-employed" (Jensen and Wang).

Recent research on the factors contributing to poverty among workers suggests that human capital is very important in accounting for poverty among workers and

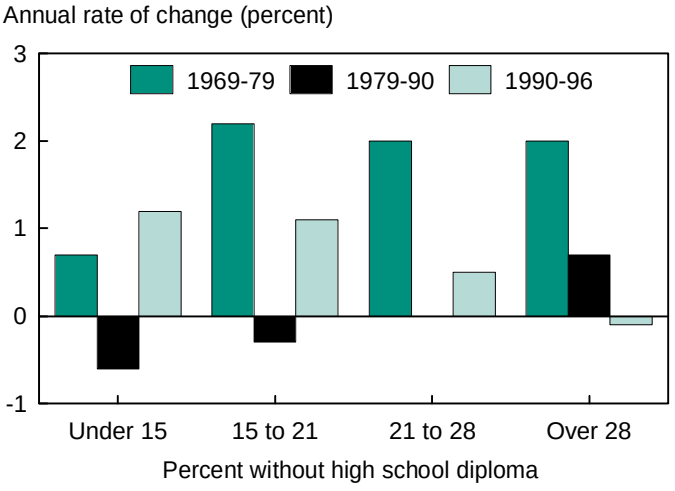
that educational attainment is increasingly important in lifting workers above poverty (Thompson and Gray). As corroborating evidence, recent data from the Census Bureau show that in 1997, college graduates earned an average of 76 percent more than workers with only a high school diploma.

Advancement. For those hampered by poverty, poor education, and/or racial inequality, climbing the career ladder (if there is one) is no easy task. Consider rural Southerners who have graduated from high school but do not go on to college. Once in the labor force, they tend to have fairly stable employment histories. However, that stability tends to keep them in lower skill, lower paying jobs that offer little chance of advancement. In fact, nearly 60 percent had not advanced appreciably after 4 years in the workforce. Some lost ground. As one might expect, noncollege-bound Blacks have a tougher go of it than either Whites or Hispanics (Beaulieu and Barfield).

Training and skill development represents another aspect of career advancement. A survey of rural Southerners showed that (1) those with higher levels of education are more likely to demand training, (2) holding a high-prestige position increases the likelihood of getting training, (3) participation in training is motivated by social capital or civic engagement, and (4) demand for training depends in part upon having opportunities for a new job (Rupasingha and Ilvento).

Finally, the type and number of firms that choose to locate in a region can significantly affect the advancement opportunities of workers in that region. On that subject, the ERS manufacturing survey found that new manufacturing technologies raise job skill requirements and, consequently, manufacturers using those technologies are less likely to locate in low education areas, including those in the rural South. In a reversal of previous periods, Southern rural manufacturing employment in the 1990's has shifted away from counties with low levels of education and toward those with higher levels (fig. 5). In addition, when asked about the problems associated with adopting new technologies, 40 percent of rural Southern manufacturers said adequacy of worker skills was a barrier (McGranahan).

Figure 5
Change in rural manufacturing jobs in the South by county education level
Recent growth in manufacturing jobs has been higher in areas with higher levels of education



Source: McGranahan.

Getting Ready

Getting ready means different things for different people and places. In many of the South's urban and rural areas, change brings the promise of opportunity and prosperity. In those areas, getting ready means continuing to do what they have been doing—continuing to adopt new technology, tap new markets, learn new skills, and the like.

For the "other South," however, changes threaten rather than promise. For these predominantly rural areas, getting ready means not only adapting to the future, but also overcoming the past. The two meet head to head in the labor market, where a changing demand meets a largely unchanging supply.

Changing Demand

Job opportunities are, and will continue to be, greatest for those with higher levels of education and technical skills. Those with less education and fewer skills will likely be relegated more and more to lower paying jobs in the service sector with little potential for advancement. An ironic exception seems to be the rising demand for low-skill, low-wage workers in industries like meatpacking that attract large numbers of Hispanic and, in some cases, Asian immigrants. That these jobs are going to immigrants with relatively few skills, little education, and quite often a language deficiency presents something of a conundrum. Why aren't residents of the region taking these jobs? It appears that the jobs are simply too unattractive to native-born Americans—even those with relatively few prospects—because of the wages and nature of the work.

Unchanging Supply

In the past, many young people in the rural South went to work rather than continue their education. The prevailing wage afforded a stable, comfortable living and the returns to education in the local labor market were low. That is changing. Yet large portions of the rural South continue to lag in educational attainment.

On the other hand, at least some of the low-skill jobs that exist go to immigrants. Thus, it seems that many workers in the rural South are perhaps stuck in the middle—unable to compete for the higher skilled jobs and unwilling to take the lower skilled ones.

Finally, there are obstacles to qualified workers moving to better jobs outside the region. First, despite improvements, workers in rural areas—especially poor rural areas—often lack accurate, up-to-date information on job opportunities outside their immediate region. The situation is made worse, of course, by lack of education. Likewise, prior experience with cyclical employment seems to lead some workers to believe that "the old jobs will return." Second, commuting or relocating to jobs outside one's area of residence can be quite costly—financially as well as socially.

So What Do We Do?

The research suggests two avenues of action: (1) helping workers get the education and skills they need to meet the demands of the changing workplace, and (2) helping workers find suitable jobs.

Regarding the first, recommendations to invest in human capital fill nearly every report written on the rural South. Yet the need continues. Why? Part of the reason stems from the fact that no one has come up with a way to get students to take the bait. In 1998, the percentage of rural Southerners with college degrees was only half of what it was for the Nation or the urban South—this despite the 76-percent premium that college graduates earn over those with only a high school diploma. Overcoming this educational inertia in the rural South is made especially difficult in areas where the current mix of jobs simply does not demand higher skills and young workers are loathe to move to higher skill jobs elsewhere, for which they would not qualify anyway.

The skills of those already in the workforce are just as important as the skills of those about to enter it. And raising the skills of those already working may be somewhat easier, especially if training is tied to higher earnings and advancement. Employer-based training programs, where companies manage both the curriculum and the rewards, have the best chance of doing that.

As for the second avenue, the first step is to improve the flow of information to workers about opportunities both in the region and elsewhere, since remoteness and low density make it hard for rural residents to learn of job openings. Furthermore, rural areas tend to rely heavily on informal systems to match workers and jobs. Openings are advertised via "word of mouth" among friends and relatives—a procedure that restricts both a firm's access to workers and workers' access to jobs.

One way to improve the information flow is to pay greater attention to and assist employment agencies as they match workers to jobs. Such agencies can find and screen potential workers for firms on the one hand, while providing workers with full-time employment (albeit often with various employers on a temporary basis) on the other. Critical services such as transportation and limited job training are also sometimes part of the package an agency offers.

Another way to improve information is by investing in advanced telecommunications and the ability to use them. Access to and familiarity with the Internet is a powerful way to match workers with jobs.

Second, efforts are needed to facilitate multiple job holding. In many areas, workers are forced to piece together full-time employment from several part-time jobs. As the economic base of rural areas changes, many workers are left without full-time jobs. Growth in seasonal employment—tourism and other service sectors—provides mainly part-time opportunities. In order to get by, many households have to combine multiple part-time jobs by several members of the household. Again, employment agencies can help by matching workers with jobs. In such cases, support services like child care are also critical.

Finally, every effort should be made to maintain existing jobs in the region—even those that are low-skill and low-wage. For many workers, those jobs are the only ones for which they will ever qualify and for other workers they are the first step in building a career. That said, those jobs cannot be viewed as a long-term solution to the region's problems. Rather, they should be considered an interim measure, a necessary transition into the new economy.

It is often the nature of recommendations that they raise as many questions as they answer. And these are no different. How do we help students overcome the educational inertia that surrounds them and go on to graduate from college? How do we make it worth their while to come back with those degrees? Will higher quality labor in an area attract higher quality jobs or are higher quality jobs the key to improving the quality of labor? How do all these pieces fit together? And who should do what?

Obviously, questions remain. And while efforts to get ready cannot afford to wait on answers to those questions, efforts to answer the questions should not wait either. There is work to be done on both fronts, each feeding the other, because the future will not wait… whether the rural South and its workforce are ready or not.

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Thomas D. Rowley and David Freshwater

Are Workers in the Rural South Ready for the Future?

Widespread prosperity in the South has not benefited everyone. Some Southerners continue to live in poverty, lack adequate education and training, and experience racial inequality. Consequently, those Southerners fare poorly in the current labor market and are positioned poorly for future labor markets. Many live in the region's rural areas. Indeed, one could make the case that there are two Souths—one prospering and ready for the future, another lagging and vulnerable.

After decades as the Nation's economic backwater, the South has risen to prominence. In fact, it's the second fastest growing region of the country. As a result, millions of Southerners are enjoying prosperity and a hopeful future. But all is not rosy. For millions, the future is hopeful but for others it is ominous. To say that the difference is decided by skin color, occupation, education, or place of residence is, obviously, an oversimplification—but not a gross one. Southern Whites still have higher incomes than Southern Blacks. Professionals have more opportunities and security than do blue-collar workers. College graduates earn higher wages than do high school dropouts. And the urban South is, for the most part, better off than the rural South. This article highlights recent research findings on the status of rural Southern workers and their readiness for the future.

What the Future Holds for the Rural South

We know the future will differ from the past. Cotton fields give way to smokestacks. Smokestacks yield to service centers. Service centers may bow to some as-yet-unknown development. The economy, and therefore the life, of the rural South changes. The results of that change—good or bad—will depend largely on how well rural Southerners foresee the change and respond to it. And while no one can predict the exact nature of change or its implications, several trends give strong clues as to its general direction.

Technological Advance

Few trends influence our daily lives as profoundly as that of technological advance—especially computer-based technology. It truly changes the way we live and work. For workers, firms, and regions to exploit technology, they must be willing and able to stay abreast of technology and use it to advantage. While rural areas have historically been slow to gain access to and adopt new technology, recent research suggests that at least some parts of the technology gap are narrowing. A survey of manufacturing firms found "relatively few rural-urban differences in the use of new technology" and that "apparently, there is no longer any substantial rural disadvantage in access to information and specialized knowledge, at least insofar as technology adoption is concerned" (McGranahan). The survey did, however, find one obstacle to technology adoption that is especially prevalent in the rural South: low levels of education.

Service Sector Growth

That the United States, and indeed the industrialized world, has become a service economy is by now cliché. Indeed, in parts of the Nation and in some social circles, it is rare to find anyone that actually produces goods for a living. And the number of service jobs is increasing. From 1991 to 1996, 88 percent of the net new jobs in the Nation were created in service-producing industries. Since nothing suggests an end to this trend, job seekers of the future will find most of their prospects in the service sector.

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The implications for the rural South and its workforce are somewhat ambiguous. The question revolves around jobs and wages. Are service industries likely to locate in the rural South in sufficient numbers? Will they pay attractive salaries? Will they provide full-time employment? Research suggests that the more routine, export-oriented services are not likely to shift to rural areas to take advantage of low-cost labor the way manufacturing did. Their reliance on proximity to markets and/or sophisticated telecommunications infrastructure may prohibit such a move, particularly if rural areas continue to lag urban in gaining advanced telecommunications.

As for wages, research findings are mixed. High-skill producer services do pay attractive wages. The trick will be getting those jobs to locate in the rural South by offering the things that attract such firms—good schools, adequate infrastructure, community services, and the like.

Organizational Restructuring

In response to their changing environment, firms and entire industries are changing the way they do business. Unlike its hierarchical, large-scale, vertically integrated ancestor, the firm of the future will likely be flatter, more flexible, and more focused on niche markets. Not surprisingly, such organizations will need workers who can solve problems, make decisions, work in teams, and adapt to changing circumstances.

The implications for the rural South of such restructuring are less than obvious. They will likely vary greatly by industry and location. One researcher finds that restructuring may slow wage growth but not employment growth in the rural South. In fact, manufacturing employment continues to shift from urban to rural areas despite restructuring of industry and the increased importance of being close to one's suppliers and markets (Barkley).

Globalization

Simply stated, globalization means that barriers to commerce are falling. It means freer markets and freer flowing capital. It means that corporations can buy where they wish, produce where they wish, and sell where they wish. Consequently, it means more choices and lower prices for the consumer. Unfortunately, it also often means lower wages for the worker and increasing vulnerability for workers, firms, and even entire economies. Everyone competes with everyone else.

As for the South, its rural areas have in the past been "safe harbors for the nation's labor-intensive and natural resource-dependent industries." In the global economy, however, these areas and their dominant sectors are growing more vulnerable to competition from lower cost producers in Asia and Latin America (Glasmeier and Leichenko).

Demographic Change

Just as barriers to the movement of goods and services fall, so too do barriers to the movement of people. From 1990 to 1996, 1.6 million more Americans moved from the city to the country than the reverse. Another 227,000 moved to rural areas from other countries. The reasons, of course, vary. Some move to find work, others move to find a higher quality of life, others move to be near family. Whatever the reasons, many rural areas are growing, with great impact on their economic future.

Obviously, growth affects an area directly. More people pay more taxes and need more housing, infrastructure, and services. Less obvious, though no less important, is the effect migration has on the distribution of human capital. The age, education, income, and skills of migrants greatly influence the economy and prospects of both areas—the one getting them and the one losing them.

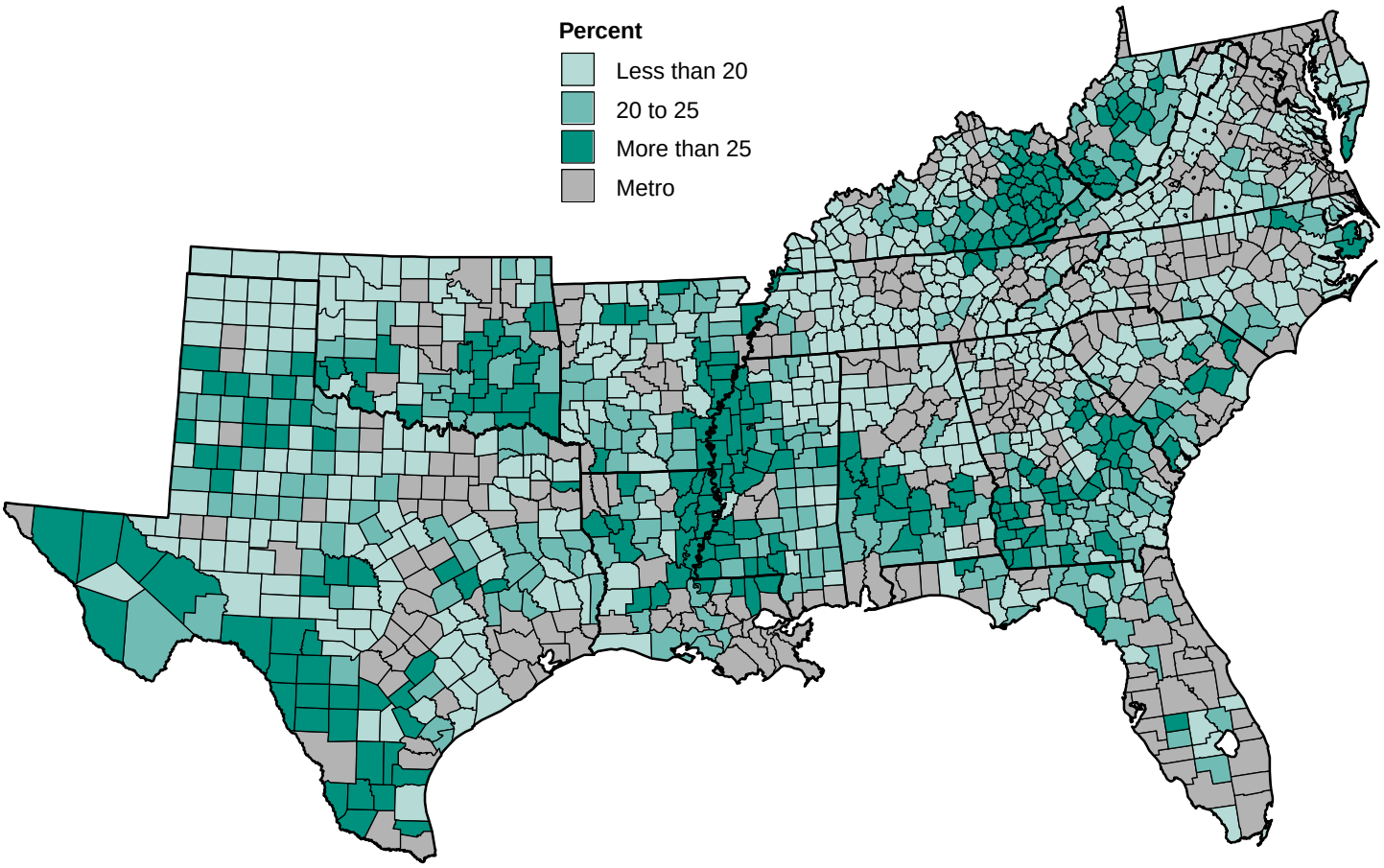
What impacts on human capital will this influx of migrants have on the rural South? Overall, the picture is good. A majority of the net inmigrants is in the early career years and a disproportionate share is in young families. And the "brain drain" (the departure of the more educated) that prevailed in the 1980's has slowed and possibly stopped. High school graduates are now over-represented among those moving into the rural South, and high school dropouts are under-represented. In addition, more college graduates are moving into than out of the rural South, although they are still somewhat under-represented among inmigrants (Nord and Cromartie).

The destination within the rural South of these migrants varies. Most of the net gain goes to counties next to metro areas, but much of it also goes to nonadjacent counties. Counties with natural amenities—lakes, rivers, mountains, beaches, etc.—offer the strongest appeal to migrants, while the poorest areas benefit the least. Net migration to the 443 rural Southern persistent-poverty counties (those that have had poverty rates in excess of 20 percent in each of the last four censuses) remains far below migration to other counties. Worse, during the 1980's, characteristics of migrants to the poverty counties tended to reinforce rather than mitigate economic inequality. Whether that trend is continuing in the 1990's remains to be seen (Nord and Cromartie).

Government Intervention

Government intervention influences the workplace in myriad ways. It affects so many aspects of work, in fact, that describing its various implications for the future borders on the impossible. The implications of one specific intervention—welfare reform—are, however, relatively clear: large numbers of people with scant work experience, relatively few skills, and little formal education will be entering a job market that demands exactly the opposite.

Figure 1
Poverty rate of nonmetro counties in the South, 1995
Pockets of poverty remain across the rural South



Source: Prepared by ERS using data from the U.S. Bureau of the Census Small Area Income and Poverty Estimates, 1995.

Across the Nation, rural areas rely more heavily than do urban on government transfer payments—things such as Social Security, Medicare, and Medicaid. In fact, they comprise one-fifth of rural income as opposed to 15 percent of urban income. And many areas of the rural South—Appalachia, the so-called "Black Belt," the Mississippi Delta, counties in Texas with high concentrations of Hispanics—depend even more on these payments. Obviously, changes in these programs, such as those stemming from welfare reform, will have a tremendous effect on people in the rural South. This is especially true in areas that have few jobs available and few ancillary services, such as childcare and transportation, that are critical for welfare reform to work.

Clearly, these trends point to a future that demands more from workers, firms, and regions. The game is changing—in terms of competitors and in the rules of competition. The days in which the rural South fed itself through cheap land and cheap labor are numbered. Success, if not survival, will require a workforce ready to use cutting-edge technology, ready to take on competitors worldwide, ready to rethink what they do and how they do it.

Shaping the Workforce

Shaping a workforce for the future involves many hands. Together, they provide the nurture, education, experience, and incentives that forge the workforce (as well as footing most of the bill). Unfortunately, the process is hampered in parts of the rural South by its "legacies" of poverty, undereducation, and racial inequality. As a result, readiness is in question.

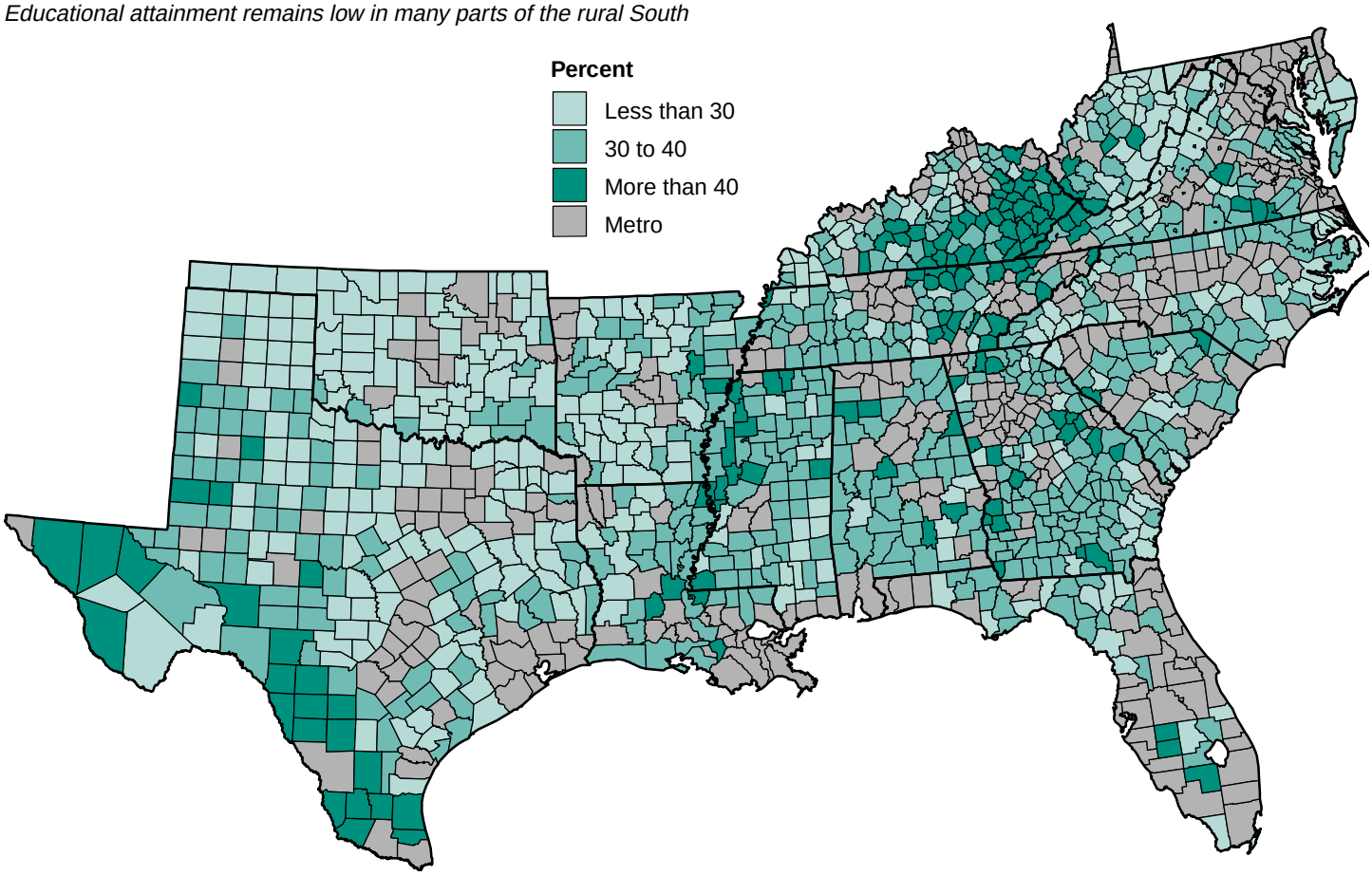
Poverty

The rural South continues to lag the rest of the country in terms of income. In 1997, median household income in the rural South was only 73 percent of U.S. median household income (or $10,000 less per year). Southern rural Blacks and Hispanics fared even worse. Furthermore, income and wealth are "inextricably linked, for it is higher income that gives a family the opportunity to own a house, start a business, invest in education." Unfortunately, "one in five Southern families has essentially no wealth" (MDC, Inc.).

Figure 2

Proportion of working-age persons lacking high school diploma or equivalent in nonmetro counties of the South, 1990

Educational attainment remains low in many parts of the rural South



Source: Prepared by ERS using data from the U.S. Bureau of the Census Summary Tape File 3C, 1990.

But that is only part of the story. By aggregating personal income to the community level, we can begin to gauge its impact on a community's ability to care for its own—to pay for the schools that are so critical, to finance infrastructure, to improve health, and to lower crime. Here again, parts of the rural South stand out in their misfortune. Of 1,006 counties in the rural South, 44 percent (443) are persistent poverty counties and many have poverty rates as high as 40 percent (fig. 1).

Frankly, expecting communities such as these to develop and maintain a workforce that can compete worldwide using the latest technologies and business practices is perhaps unrealistic. Indeed, lacking the resources to develop, they are unable to increase their resources.

Undereducation

Charged with educating and training tomorrow's workforce, local school systems play a crucial role in a region's well-being. Sadly, researchers conclude time and again that education and training in the rural South fall far short. One of the most recent studies found that teachers in the rural South:

- are less satisfied than those in other regions with salaries, resource availability, class size, teaching as a career, and the level of "problems" in the learning environment;
- receive lower pay than teachers in other rural areas; and
- graduate from prestigious universities at lower rates than other rural teachers do (Ballou and Podgursky).

On top of these deficiencies lie those that plague rural schools across the Nation, such as fewer advanced classes, lower teacher salaries, and teachers leading classes outside their major subject. Schools in the rural South appear to suffer twice: once for being rural and again for being Southern (fig. 2).

Not surprisingly, achievement scores for students in the rural South continue to lag national, rural, and urban South averages, as do measures of adult literacy and educational attainment (table 1).

Racial Inequality

In examining the South, one never gets afar from the subject of race. It plays a significant role in the endowments and performance of the rural South. Referring specifically to education and training, one researcher makes the larger case as well: "The presence of a significant Black minority in the region and the legacy of unequal public human capital investments create an environment of unusually large variation in education and training outcomes within the region, and lower levels of attainment and achievement overall" (Gibbs).

Obviously, improving the overall endowment and prospects of the rural South demands reducing long-term racial inequalities (fig. 3).

Is the South Ready or Not?

Of course, the proof of the pudding is in the eating. If we are concerned about the ability of the rural Southern workforce to prosper, we must look not only at factors that shape it, but also at the ability itself—at labor market performance.

The Good News

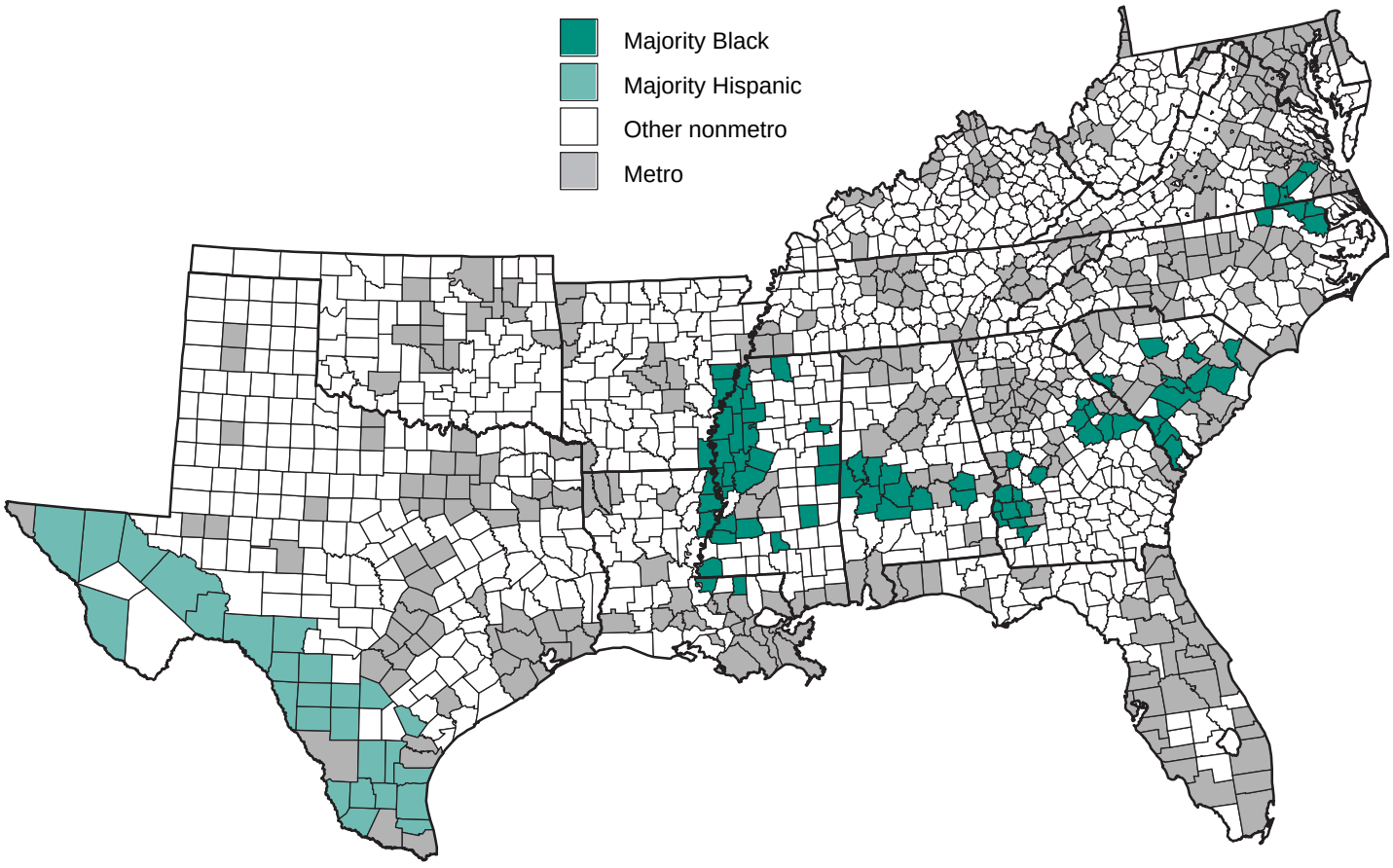
Some workers in the rural South are doing quite well. In a region where manufacturing provides nearly 20 percent of the jobs, more than 25 percent of earnings, and indirectly generates a substantial number of service sector jobs, the actions of manufacturers are critical. And the news on the manufacturing front is somewhat favorable. The recent spate of automotive plants locating in the South (some in rural areas) has brought with it higher skill, higher wage jobs. In fact, research findings indicate that high-skill manufacturing jobs grew faster in the 1970's and 1980's in the rural South than did other, low-skill manufacturing jobs (such as those involved in the making of lumber, paper, and textiles) in which growth was flat (Wojan).

In addition, there are signs that other manufacturers are "upskilling." The ERS manufacturing survey finds evidence that "new technologies are raising the skill needs of rural manufacturers." And as for the South, manufacturers in rural counties with higher levels of education are adopting technology at only slightly lower rates than are firms elsewhere in the country (McGranahan).

Figure 3

Majority Black and majority Hispanic nonmetro counties in the South, 1990

Parts of the rural South have high concentrations of minorities



Source: Prepared by ERS using data from the U.S. Bureau of the Census Summary Tape File 3C, 1990.

Table 1

Measures of educational achievement and attainment

Education lags in the rural South

Item	U.S. average	Urban South	Rural average excluding South
	Rural South score as a percentage of other groups' scores		
Test scores, 1994:			
Math	97	98	96
Reading	97	98	96
Science	97	99	94
Educational attainment, 1998:			
Less than high school	173	173	193
High school graduate	117	119	92
Some college	88	90	85
College graduate	53	51	79

Source: Achievement—National Assessment of Educational Progress in Gibbs; Attainment—1998 March Current Population Survey, from Mark Nord.

In general, higher skills imply higher wages, broader opportunities, and easier access to continued skill development. Thus, higher skilled workers, in the rural South and elsewhere, face a more prosperous, more secure future than those with lower skills. Unfortunately, the rural South still has more than its share of people on the low end of the scale.

The Bad News

The toll that poverty, poor education, and racial inequality take on many workers in the rural South can be seen in three critical dimensions of the labor market—the ability to find work, the ability to earn a living wage, and the ability to advance.

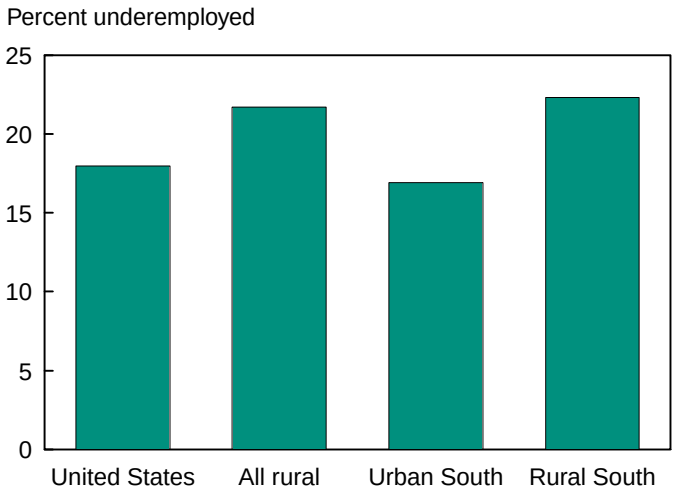
Employment. The unemployment rate is higher in the rural South than in the Nation as a whole, the rest of rural America, or the urban South—but that is only part of the problem. A better measure counts not only the unemployed, but also "discouraged workers" who have given up looking for a job, workers who work less than full-time only because they are unable to find full-time jobs, and the "working poor" who earn less than 125 percent of the individual poverty threshold. On this measure of under-employment, the rural South fares slightly worse than the U.S. rural average, but significantly worse than the urban South and the rest of the Nation (fig. 4) (Jensen and Wang).

Breaking this measure down into its components and examining the performance by race and education sharpens the focus. As expected, education reduces underemployment. The more you have, the better off you are. In fact, over one-third of high school dropouts in the rural

Figure 4

Underemployment in the rural South compared with other groups, 1998

Rural underemployment remains high in the South



Source: Jensen and Wang; March 1998 Current Population Survey.

South were underemployed in 1998, whereas less than 5 percent of college graduates were (Jensen and Wang). Those who do not go to college, on the other hand, are more likely to face periods of unemployment than their college-educated peers and tend to be unemployed for three times longer (Beaulieu and Barfield).

Also as expected, Blacks and Hispanics suffer underemployment at significantly higher rates than Whites. Twenty-nine percent of Blacks in the rural South were underemployed in 1998, compared with 30 percent of Hispanics and 20 percent of Whites (Jensen and Wang).

Wages. Given the South's historic reliance on low wages as a business recruitment strategy, it should come as no surprise that wages per job in the rural South remain well below the national and rural averages—and the situation is not improving. Likewise, manufacturing jobs in the rural South (nearly 20 percent of all jobs) pay only 68 percent of the U.S. average, the same as they did in 1969.

Low wages partly explain the prevalence of the "working poor" in the rural South and the fact that they account for nearly half of all working poor in rural America (Jensen and Wang). Low wages also explain a large part of the underemployment problem in the rural South. Of the 22.3 percent of underemployed people in the rural South, the "working poor" comprise the largest group at 9.6 percent, followed by 6.1 percent working "low hours," 5.5 percent "unemployed," and 1.1 percent "sub-employed" (Jensen and Wang).

Recent research on the factors contributing to poverty among workers suggests that human capital is very important in accounting for poverty among workers and

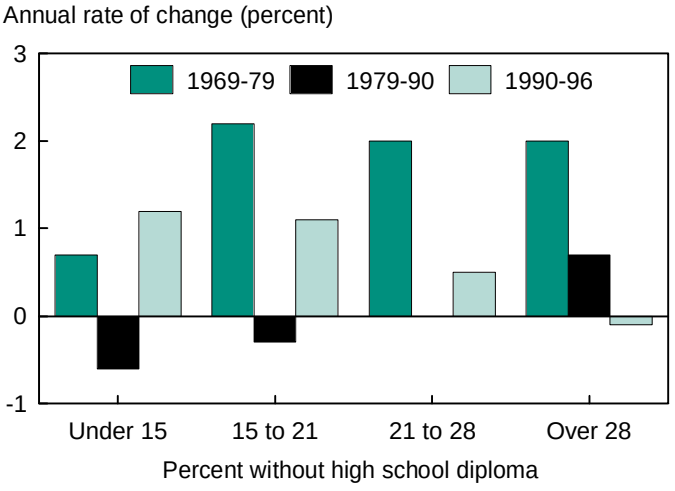
that educational attainment is increasingly important in lifting workers above poverty (Thompson and Gray). As corroborating evidence, recent data from the Census Bureau show that in 1997, college graduates earned an average of 76 percent more than workers with only a high school diploma.

Advancement. For those hampered by poverty, poor education, and/or racial inequality, climbing the career ladder (if there is one) is no easy task. Consider rural Southerners who have graduated from high school but do not go on to college. Once in the labor force, they tend to have fairly stable employment histories. However, that stability tends to keep them in lower skill, lower paying jobs that offer little chance of advancement. In fact, nearly 60 percent had not advanced appreciably after 4 years in the workforce. Some lost ground. As one might expect, noncollege-bound Blacks have a tougher go of it than either Whites or Hispanics (Beaulieu and Barfield).

Training and skill development represents another aspect of career advancement. A survey of rural Southerners showed that (1) those with higher levels of education are more likely to demand training, (2) holding a high-prestige position increases the likelihood of getting training, (3) participation in training is motivated by social capital or civic engagement, and (4) demand for training depends in part upon having opportunities for a new job (Rupasingha and Ilvento).

Finally, the type and number of firms that choose to locate in a region can significantly affect the advancement opportunities of workers in that region. On that subject, the ERS manufacturing survey found that new manufacturing technologies raise job skill requirements and, consequently, manufacturers using those technologies are less likely to locate in low education areas, including those in the rural South. In a reversal of previous periods, Southern rural manufacturing employment in the 1990's has shifted away from counties with low levels of education and toward those with higher levels (fig. 5). In addition, when asked about the problems associated with adopting new technologies, 40 percent of rural Southern manufacturers said adequacy of worker skills was a barrier (McGranahan).

Figure 5
Change in rural manufacturing jobs in the South by county education level
Recent growth in manufacturing jobs has been higher in areas with higher levels of education



Source: McGranahan.

Getting Ready

Getting ready means different things for different people and places. In many of the South's urban and rural areas, change brings the promise of opportunity and prosperity. In those areas, getting ready means continuing to do what they have been doing—continuing to adopt new technology, tap new markets, learn new skills, and the like.

For the "other South," however, changes threaten rather than promise. For these predominantly rural areas, getting ready means not only adapting to the future, but also overcoming the past. The two meet head to head in the labor market, where a changing demand meets a largely unchanging supply.

Changing Demand

Job opportunities are, and will continue to be, greatest for those with higher levels of education and technical skills. Those with less education and fewer skills will likely be relegated more and more to lower paying jobs in the service sector with little potential for advancement. An ironic exception seems to be the rising demand for low-skill, low-wage workers in industries like meatpacking that attract large numbers of Hispanic and, in some cases, Asian immigrants. That these jobs are going to immigrants with relatively few skills, little education, and quite often a language deficiency presents something of a conundrum. Why aren't residents of the region taking these jobs? It appears that the jobs are simply too unattractive to native-born Americans—even those with relatively few prospects—because of the wages and nature of the work.

Unchanging Supply

In the past, many young people in the rural South went to work rather than continue their education. The prevailing wage afforded a stable, comfortable living and the returns to education in the local labor market were low. That is changing. Yet large portions of the rural South continue to lag in educational attainment.

On the other hand, at least some of the low-skill jobs that exist go to immigrants. Thus, it seems that many workers in the rural South are perhaps stuck in the middle—unable to compete for the higher skilled jobs and unwilling to take the lower skilled ones.

Finally, there are obstacles to qualified workers moving to better jobs outside the region. First, despite improvements, workers in rural areas—especially poor rural areas—often lack accurate, up-to-date information on job opportunities outside their immediate region. The situation is made worse, of course, by lack of education. Likewise, prior experience with cyclical employment seems to lead some workers to believe that "the old jobs will return." Second, commuting or relocating to jobs outside one's area of residence can be quite costly—financially as well as socially.

So What Do We Do?

The research suggests two avenues of action: (1) helping workers get the education and skills they need to meet the demands of the changing workplace, and (2) helping workers find suitable jobs.

Regarding the first, recommendations to invest in human capital fill nearly every report written on the rural South. Yet the need continues. Why? Part of the reason stems from the fact that no one has come up with a way to get students to take the bait. In 1998, the percentage of rural Southerners with college degrees was only half of what it was for the Nation or the urban South—this despite the 76-percent premium that college graduates earn over those with only a high school diploma. Overcoming this educational inertia in the rural South is made especially difficult in areas where the current mix of jobs simply does not demand higher skills and young workers are loathe to move to higher skill jobs elsewhere, for which they would not qualify anyway.

The skills of those already in the workforce are just as important as the skills of those about to enter it. And raising the skills of those already working may be somewhat easier, especially if training is tied to higher earnings and advancement. Employer-based training programs, where companies manage both the curriculum and the rewards, have the best chance of doing that.

As for the second avenue, the first step is to improve the flow of information to workers about opportunities both in the region and elsewhere, since remoteness and low density make it hard for rural residents to learn of job openings. Furthermore, rural areas tend to rely heavily on informal systems to match workers and jobs. Openings are advertised via "word of mouth" among friends and relatives—a procedure that restricts both a firm's access to workers and workers' access to jobs.

One way to improve the information flow is to pay greater attention to and assist employment agencies as they match workers to jobs. Such agencies can find and screen potential workers for firms on the one hand, while providing workers with full-time employment (albeit often with various employers on a temporary basis) on the other. Critical services such as transportation and limited job training are also sometimes part of the package an agency offers.

Another way to improve information is by investing in advanced telecommunications and the ability to use them. Access to and familiarity with the Internet is a powerful way to match workers with jobs.

Second, efforts are needed to facilitate multiple job holding. In many areas, workers are forced to piece together full-time employment from several part-time jobs. As the economic base of rural areas changes, many workers are left without full-time jobs. Growth in seasonal employment—tourism and other service sectors—provides mainly part-time opportunities. In order to get by, many households have to combine multiple part-time jobs by several members of the household. Again, employment agencies can help by matching workers with jobs. In such cases, support services like child care are also critical.

Finally, every effort should be made to maintain existing jobs in the region—even those that are low-skill and low-wage. For many workers, those jobs are the only ones for which they will ever qualify and for other workers they are the first step in building a career. That said, those jobs cannot be viewed as a long-term solution to the region's problems. Rather, they should be considered an interim measure, a necessary transition into the new economy.

It is often the nature of recommendations that they raise as many questions as they answer. And these are no different. How do we help students overcome the educational inertia that surrounds them and go on to graduate from college? How do we make it worth their while to come back with those degrees? Will higher quality labor in an area attract higher quality jobs or are higher quality jobs the key to improving the quality of labor? How do all these pieces fit together? And who should do what?

Obviously, questions remain. And while efforts to get ready cannot afford to wait on answers to those questions, efforts to answer the questions should not wait either. There is work to be done on both fronts, each feeding the other, because the future will not wait… whether the rural South and its workforce are ready or not.

For Further Reading . . .

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Alton Thompson and Benjamin Gray, "A Comparison of Two Approaches to the Rural Labor Market: Human Capital And Dual Labor Market," paper presented at the Southern Rural Labor Force Conference, Oct. 1998.

Timothy Wojan, "Functional Skill Requirements of Manufacturing Employment in the Rural South," paper presented at the Southern Rural Labor Force Conference, Oct. 1998.

Patrick Commins, Karen S. Hamrick, Anicca C. Jansen, Kevin Murphy, and Peter L. Stenberg

Rural Issues in the Republic of Ireland and Northern Ireland Common to United States

Despite differences in history and geography, the United States and the Republic of Ireland and Northern Ireland share similarities in regard to rural development issues. These similarities include restructuring in the agricultural sector, rural outmigration, the need to develop alternative employment opportunities in rural areas, the need for coordination of effort by various agencies involved in rural development, and issues of funding and institutional organization.

The 1990's have seen a remarkable economic revival in the Republic of Ireland. Over the past 5 years, real GDP growth rates averaged 8 percent and inflation was reduced drastically. The emigration of the 1980's has given way to an inflow of population. Job growth has accelerated, and unemployment rates have fallen by half—to under 8 percent in 1998. Public finances are now in surplus and the national debt, relative to GDP, has been reduced substantially.

While economic growth in Northern Ireland has not matched that of the Republic, it has outpaced that in the United Kingdom (UK) as a whole, averaging 2.4 percent a year during 1990-95. The current unemployment rate is down to 8 percent. Many factors explain this economic resurgence, but clearly the cease-fires of 1994 in Northern Ireland and the subsequent efforts to advance the peace process have helped.

Notwithstanding the general economic revival in the island of Ireland, concern for the development of rural areas and for the well-being of rural communities has remained high on the policymaking agenda for four reasons. First, both the Republic and Northern Ireland have relatively large rural populations. In the Republic, 48 percent of its 3.6 million inhabitants live outside of city centers of 5,000 or more people. In Northern Ireland, 44 percent of its population of 1.5 million live outside of the two major urban centers and 23 District towns.

Second, despite the economic boom, outmigration and population decline persist, especially in the more geographically remote areas. Third, agriculture employs a comparatively large share of the rural labor force, particularly in the Republic (22 percent of workers outside of towns of 1,500 persons upwards). Even so, many farms will not be commercially viable in the context of greater trade liberalization after 2000. In Northern Ireland as well, economic activity in rural areas is dominated by farming and agricultural services.

Finally, rural industrialization based on past models of "importing" capital and enterprise from abroad or from urban areas will likely become more difficult to achieve. Certain types of labor-intensive enterprises can readily move to lower cost economies, while high-tech, capital-intensive enterprises locate close to urban centers. Consequently, there is renewed emphasis on maximizing the potential of indigenous resources.

Of particular concern is the economic situation of the border counties—Cavan, Donegal, Leitrim, Louth, Monaghan, and Sligo—in the Republic, together with the six counties of Northern Ireland. Until 1994, the closing of smaller roads crossing the 260-mile border further isolated some towns and villages. In addition, some areas

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experienced violence from the conflict. Consequently, this mostly rural territory has faced difficult obstacles in economic development.

This article presents some of the similarities and differences in rural development in the Republic of Ireland and Northern Ireland, and in the United States. The findings presented here are a result of a research exchange project (see box, "Information on the Research Exchanges").

Rural Development Efforts Promote Farm Diversification

The rural economy of the Republic and of Northern Ireland is primarily agricultural. Rural development efforts have emphasized this agricultural base, as well as tourism and small business ventures. Agricultural and rural development programs are framed predominantly within European Union (EU) policies, and the island of Ireland—the Republic and Northern Ireland—has priority status in the EU's Structural Funds program, although this favorable designation has been withdrawn for part of the Republic and is likely to be fully or partially withdrawn for Northern Ireland on the basis of economic progress.

In the Republic of Ireland, development programs have emphasized a number of measures, including onfarm investment to strengthen productive capacity, general farm structural improvements, diversification of farming activities, tourism, reforestation, and human resource development, especially the training of career farmers and of rural adults involved in community-based rural development projects. In addition to dealing with adjustments in the agricultural sector, programs are also concerned with employment creation, the improvement of rural infrastructure, and the promotion of micro-enterprises. (See box, "Irish and American Efforts Toward Economic Diversification: Two Agricultural Counties.") Priority program areas in Northern Ireland are rural community development, community-based economic regeneration, and area-based strategies targeted at specific disadvantaged areas. These programs include the implementation of farm diversification and tourism. This article focuses on four aspects of rural development: farm diversification, employment creation, community development, and infrastructure.

Farm Diversification

One of the Republic of Ireland measures supporting diversification from conventional farming emphasizes agri-tourism. Farmers and other rural dwellers are encouraged to develop tourist accommodations, such as bed-and-breakfasts, leisure facilities, and marketing systems. Rural areas may also benefit from a separate tourism program where the focus is not on farm diversification but on the development of facilities and services, such as local heritage centers (local museums built to attract tourists, but which may also have space for classes or community events), special events and related infrastructures, and specialist accommodations such as conference facilities.

Other measures support farm diversification within agriculture. One important outcome of these strategies has been the development of a thriving mushroom industry in the border counties. This is based on a satellite production system in which networks of mushroom growers supply a limited number of companies using a dedicated distribution system, with most of the output going to UK markets. Other forms of diversification within conventional farming include specialty crops and livestock, such as deer farms, which allow farmers to take advantage of market niches. However, the more traditional choice of dairy production is likely to remain a popular option due to the EU's Common Agricultural Policy (CAP) subsidies.

Employment Creation

Between 1991 and 1996, the Republic of Ireland expanded employment in the goods-producing industries (excluding agriculture) by 13 percent and in the service industries by 21 percent. There has been some concern, however, that job growth has not benefited the more remote regions.

Strategies to create jobs fall into three broad categories: attracting overseas investors, promoting indigenous enterprise, and encouraging localized small-scale businesses. In the case of inward investment, the focus has shifted from labor-intensive industries to higher value manufacturing and services. This effort has been particularly successful, and now 1,100 international companies, of which 60 percent are U.S. firms, have received incentives to locate in the Republic and employ its residents. With the growing concentration of companies in the larger urban centers, the border counties have been losing their share of new employment. In 1997, however, with a renewed determination to achieve a more equitable geographical distribution of investment, the balance of industry improved across the country.

Indigenous companies are widely dispersed, but given the Republic's small domestic markets and the need to compete successfully against international competitors, the Republic's manufacturing industry is relatively underdeveloped. State support for indigenous firms has shifted from grants aiding capital investment toward efforts addressing deficiencies in a wide range of business functions, such as innovation, technological development, training, management, and marketing.

Jim Frawley (Teagasc) and Vincent Reynolds, Chief Executive of the Cavan County Enterprise Board, in front of the Cavan Enterprise Center, a business incubator. *Photo by Anicca Jansen.*

Community Development

The Republic has two programs that emphasize local enterprise development and employment creation, and the related need to build the capabilities of local communities. The community's coming together to pursue socioeconomic development is valued as a benefit in and of itself. Developing and encouraging local organizations and entrepreneurs is increasingly a critical part of rural development strategies.

Rural development in Northern Ireland stresses that the community should be involved in the design and delivery of economic development projects and programs. In addition, the programs aim to develop the capabilities of rural communities through the provision of skills, advice, and financial assistance.

LEADER *(Liaisons entre actions de développement de l'économie rurale*—links between actions for the development of the rural economy) is an EU initiative that is conceptually similar to the National Rural Development Partnership (NRDP) program in the United States. Both programs increase the scope of multi-agency partnerships and empowerment at the local level, and both specify a systematic approach through strategic planning for local action. LEADER requires that public funds (national and EU) be matched by local LEADER groups.

Whereas LEADER is an EU program, the Republic sponsors a national initiative implemented at local levels, mainly at the county level. In 1993, 35 County Enterprise Boards (CEB's) were established in response to the perception that mainstream industrial development was not sensitive to local circumstances and opportunities. The CEB's stimulate local economic activity by providing financial and technical support for small enterprises. The boards bring together elected local government officials with state agency personnel, business, trade unions, farmers, and voluntary organizations. Over half of the projects approved by the CEB's during 1993-95 were in services and tourism.

In Northern Ireland, the rural development effort is toward producing social outcomes as well as economic development through financially viable and sustainable projects. Developing leadership and project management capacity in community groups is strongly emphasized, and partnerships among public, private, nonprofit, and community sectors are encouraged. Locally based development in Northern Ireland must seek to build bridges across divided communities, where consensus building is considerably more difficult than in the Republic and the United States.

Several community-led development projects focus on attracting tourism. Although many tourists travel to Ireland, most go to the southern and western areas of the Republic, and few have traveled to Northern Ireland over the last 25 years. In Northern Ireland, projects in designated disadvantaged areas have been designed to attract tourists to areas with natural amenities. These projects, which have received funding from a variety of sources, act as a catalyst for private sector involvement. In addition, the projects work with the Northern Ireland Tourist Board to develop rural tourism, targeting special interests such as fishing, hiking, or crafts.

Infrastructure

Ireland's peripheral location, "an island behind an island," together with the small scale and open nature of the economy, means that sea and air communications are very important. A sparse population and dispersed settlement pose challenges in providing cost-effective services. For example, in the Republic, rural mail deliveries account for only 24 percent of total volume but 61 percent of delivery costs.

Residential telecommunications service varies from modern in localities such as Dublin to limited service in rural areas, roughly corresponding to the wealth of the local areas. In addition, the level of telephone penetration in the Republic is also lower than in other EU countries. But cellular phone operations are strong, and Internet use has grown exponentially in the 1990's. The telephone system is being upgraded to handle the new demands, but sophistication varies across the island from quite modern to the old party-line residentiary systems. The recent economic growth, the increasing impact of export-oriented foreign direct investment, and the need to access distant markets have intensified the demand for good communications. Major progress has been made in upgrading the telephone system to handle new demands.

Information on the Research Exchanges

The nationalist Irish Republican Army announced a cease-fire on August 31, 1994, and was followed by a similar announcement on October 13, 1994, from the loyalist factions in Northern Ireland. In May 1995, the White House hosted a conference on trade and investment in Ireland as part of an effort to support the peace and reconciliation process in Northern Ireland and the Republic of Ireland. This effort is partly designed to foster cooperation in the areas of rural development, food safety, and the rural environment. Funding for the research exchange project, "Strategies for Rural Development in Selected Counties in the Republic of Ireland and Northern Ireland," was granted as part of this White House effort. USDA's Foreign Agriculture Service (FAS) was the granting agency, through the U.S.-Ireland Cooperation Program, which was authorized as part of the 1985 Farm Bill. This project is one of several rural development research exchange projects with Ireland that have been funded by the FAS Scientific Cooperation Program. For more information on the program, see *http://www.fas.usda.gov/* under Programs.

The exchange visits sought to strengthen the links between individuals and institutions involved in rural development in the United States, Northern Ireland, and the Republic of Ireland. The goal was to promote ongoing joint efforts in research and practice. A particular aspect of this general aim of cooperation concerned the furtherance of cross-border linkages and practical collaboration in Ireland.

In the first phase of the project, Karen Hamrick and Peter Stenberg traveled to the Republic of Ireland and Northern Ireland for 1 week each in 1995. In the second phase of the project, Anicca Jansen traveled to the Republic of Ireland and Northern Ireland for 2 weeks in 1996. In 1997, the final phase of the exchange was a 1-week visit to the United States by Patrick Commins and Kevin Murphy. In addition to meeting with rural development specialists in Washington, DC, they traveled to several counties in Maryland. Robert Halman, County Extension Director, Harford County Cooperative Extension Service, arranged meetings for Commins and Murphy in Charles, St. Mary's, Calvert, and Harford Counties, Maryland. Anicca Jansen coordinated the visit to Somerset County, Maryland. In addition, the Food and Agricultural Policy Research Institute (FAPRI) and the Rural Policy Research Institute (RUPRI) at the University of Missouri in Columbia funded and arranged an additional 2-day visit for Commins and Murphy to Columbia, Missouri.

The findings presented here are the result of interviews each of the coauthors had with rural development researchers, policymakers, and practitioners. Consequently, the sources for many of the findings here are the experts who were interviewed. In addition, the main publications used in this research are listed in the "Further Reading" section.

The entire island of Ireland is slightly smaller than the State of Maine and has no major geographical barriers, yet some areas can seem quite remote and traveling can be slow. In the Republic of Ireland, roads are by far the predominant mode of internal transportation. The mainly rural local roads account for most of the network, and traffic flows are modest by European standards. Traveling by car means narrow roads with low speed limits, and traveling by train means slow-moving trains with many stops. When the smaller border roads were closed, the border towns became much more remote than they appeared on the map. Five miles "as the crow flies" might translate into a 30-mile drive. The 1994-99 operational program for transport recognizes the need to improve local roads, especially those of importance for local economic development and tourism and for access to regional ports and national primary routes. This program also acknowledges the importance of the rail network in serving the more disadvantaged areas of the country but emphasizes replacement and maintenance over new construction. In Northern Ireland, the road network is also being improved. Although roads are relatively good between most population centers, calls to upgrade the Belfast-Dublin corridor have been constant.

A major emphasis in EU development assistance has been upgrading the highway system in the Republic. Major upgrades, such as widening the road bed and bypasses, are taking place on trunk roads linking major population centers with Dublin. In addition, motorways have been completed in recent years, with more planned to link the largest cities. The border counties depend on service from major airports for access to mainland Europe and North America, and hence, they need good road connections for economic development. New or planned road improvements in the border counties, however, are much more limited; the most common plans are for bypasses around towns.

Most of the rural electricity network was installed over 40 years ago and now needs to be upgraded. In the Republic, about 8 percent of the fuel used for electricity generation is peat. This proportion is forecast to decline such that over 200,000 acres of cutaway peatland will be available for other uses.

Similarities and Differences With the United States

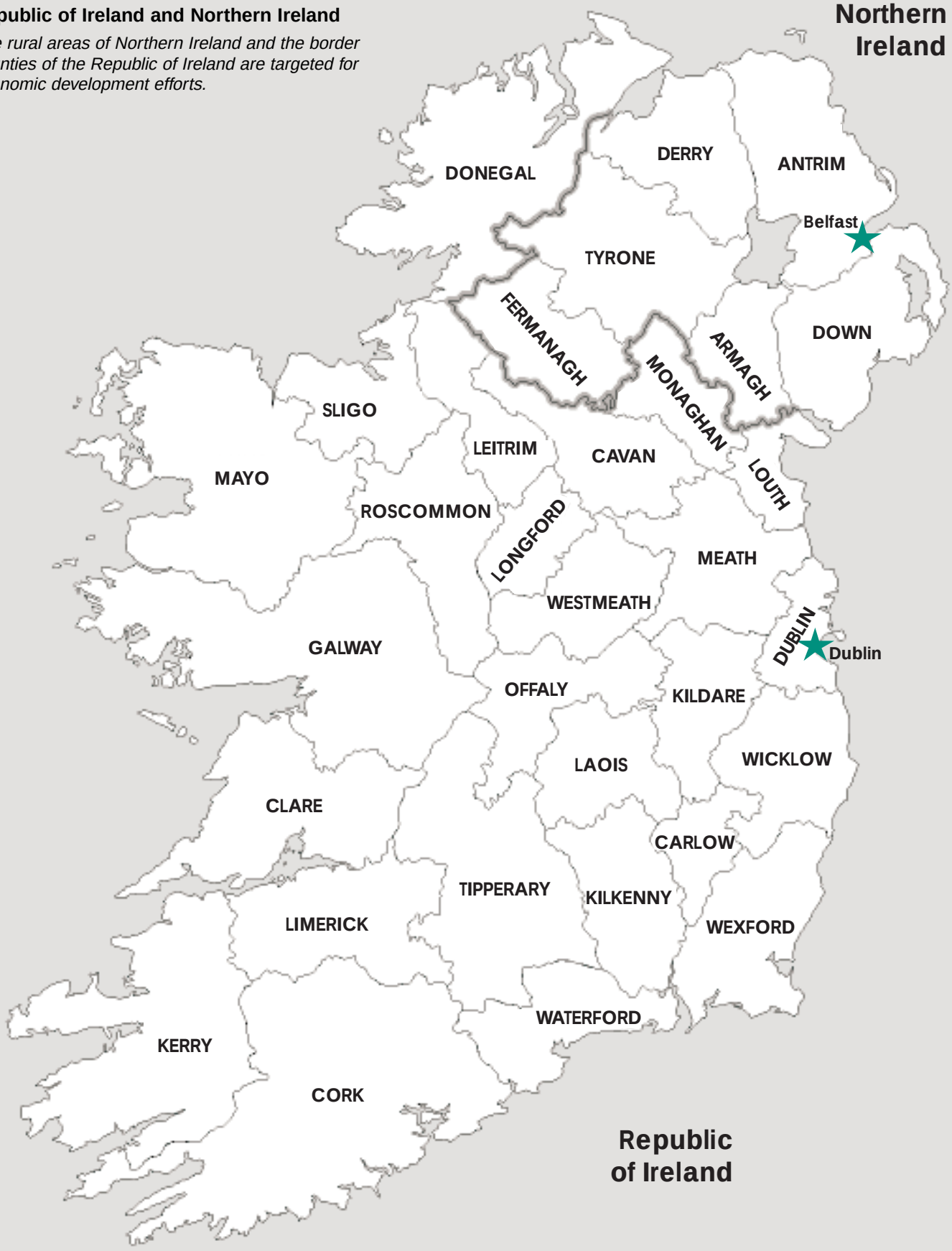
Outmigration

Both the rural United States and the island of Ireland have experienced outmigration to the cities. In the Republic of Ireland, the migration flows are to the eastern part of the country and especially to Dublin—currently, about one-third of the population lives in Dublin. Migration overseas has been balanced in recent years by an inflow of

Figure 1

Republic of Ireland and Northern Ireland

The rural areas of Northern Ireland and the border counties of the Republic of Ireland are targeted for economic development efforts.



Source: James Keenan, National University of Ireland, Maynooth, County Kildare, Ireland.

older adults, many of whom are returning exiles. The rural population in the Republic is older than the urban, since many working-age people have moved to Dublin or abroad. This pattern is similar to that in the United States where, historically, young adults have outmigrated to metro areas, leaving nonmetro areas with disproportionately more older persons. As in the United States, those with higher levels of education move from rural areas to the cities, where skilled jobs are most common. Outmigration in the rural areas of Northern Ireland is to Belfast and to cities in England. Because Northern Ireland is small, people can live in rural areas and commute to Belfast.

Agriculture

A major difference between the U.S. rural economy and that of the Republic of Ireland is the continuing importance of agriculture as an employer. Agriculture continues to be a significant, although declining, employer in the Republic, employing 10 percent of the workforce nationally and providing about 18 percent of the jobs in the border counties. In 1996, across the national workforce, 28 percent of those employed worked in the other goods-producing industries and 62 percent were in the services sector. However, only a minority of farm households depend solely on market-based income from their farms because of nonfarm income and nonmarket farm payments. Nonfarm earnings have become increasingly important, as in the United States. On 40 percent of Republic farms, the farm owner or spouse, or both, have a nonfarm job. On the average Republic farm, 52 percent of gross household income comes from the farm, 32 percent from nonfarm wages or salaries, 12 percent from transfer payments, such as pensions, and the remainder from other sources, such as investment income. Of the farm income, about half comes from nonmarket, "direct" payments from the EU or the Republic's Government. These are tied to production levels and are intended as compensation for different circumstances, such as farming in disadvantaged areas, as a cushion against price reductions under the CAP, or as payments for practicing environmentally friendly farming.

Over 80 percent of the total land area of Northern Ireland is used for agriculture. Almost all of this agricultural land is used for livestock grazing; crops occupy less than 6 percent of agricultural land. Economic activity and employment in the rural areas are dominated by farming and agricultural industries. However, employment in agriculture was only 62,000 workers in 1997, roughly 9 percent of all Northern Ireland employment.

About 9 percent of U.S. nonmetro jobs are in agriculture (only 3 percent nationwide), while the services industry accounts for the largest share of nonmetro jobs, 23 percent, and manufacturing 16 percent, with remaining

Sheep grazing in the border area. *Photo by Anicca Jansen.*

employment in other industries. On average, 89 percent of farm operator household income came from off-farm sources in 1995, although for some sales classes, this share was considerably less. Although many farms receive government payments, average government payments are small compared with off-farm income. Rural employment in Northern Ireland and the United States is fairly similar. Manufacturing accounts for a substantial portion of employment in rural areas, and about the same share of farmers have off-farm jobs. As productivity increases in agriculture, jobs inevitably shift to other industries; the United States and Northern Ireland are further along than the Republic in this transition.

Rural Policy

The European Union has promoted the concept of rural development in concert with CAP reform. In addition, EU funding is contingent on "the European Model of Sustainable Agriculture," which holds that agriculture must be market-oriented and competitive while accommodating other public goods functions, such as protecting the environment, providing a residential base for rural workers, and integrating agriculture and forestry. That policy, as interpreted in Northern Ireland and the Republic, includes the goal of maintaining a living countryside. The United States, by contrast, has historically had a number of rural development programs, without the explicit goal of saving all rural towns.

Irish and American Efforts Toward Economic Diversification: Two Agricultural Counties

Diversification from traditional agriculture is a rural development strategy pursued in many rural areas. Here the diversification strategies of two rural counties—one in the Republic of Ireland and one in the United States—are presented. Both counties were successful at getting support—funding and/or technical assistance—from outside the county to encourage new business ventures, promote tourism, and provide education and training.

County Cavan, Republic of Ireland, is a primarily agricultural border county that has organized to garner extensive economic development support. About one-third of employment in the county is from agriculture, forestry, and fishing. Most of the farms in the county are classified as dairy or beef production. These farms are small, with an average size of 19.2 hectares (47.4 acres), a bit under the Republic average of 29 hectares (71.7 acres). Almost all of the land is unsuitable for cropland and half of the farms experience pollution problems due to inadequate waste storage. In addition to agriculture, the level of agri-processing in the county is high.

In 1993, the Cavan County Enterprise Board was established to provide financial and technical support to local business, to develop and co-manage the Enterprise Center (a business incubator), and administer the Cavan County Enterprise Fund. The Fund, which receives funding from the International Fund for Ireland, provides low-interest loans and business and industry workspace in the Enterprise Center. Other local programs provide an array of economic development support, including training and education to long-term unemployed and marginalized groups, and aid to farmers and rural residents to provide tourism activities and accommodations. Other funding sources include the European Union rural development programs, the Republic, and local sources. The Cavan County Council has facilitated these programs by providing infrastructure, supportive local legislation, such as zoning, and social programs, and has provided technical assistance and financial support through the County Enterprise Board. County Cavan has also been involved in a multicounty organization, the North-West Regional Tourism Organisation Limited, to promote tourism.

Somerset County is the most southern county on the Maryland Eastern Shore. It is a nonmetro county with a population of 24,000, and is not adjacent to a metro area. It has a shoreline along the Chesapeake Bay, and its character varies from fishing communities to summer homes to marshland and wilderness. Its proximity to the centers of Salisbury, Pocomoke, and Ocean City is an advantage in terms of availability of services but a disadvantage in that there is a net migration of jobs out of the county. Much commercial activity passes through the county en route from New York/Philadelphia to Norfolk, Virginia, and the South.

Somerset has had slow population growth in the 1990's, and is reliant on economically vulnerable sectors, such as agriculture (soils are difficult to drain), fishing, seafood processing (crabs and oysters), poultry processing, and services related to these activities. Economic activity has shifted to larger production units and larger urban centers elsewhere. For the local population, reaching distant employment centers is not easy; public transportation is poor. A major employer is a large State prison built in 1987 and enlarged in 1993. With 3,500 inmates and 1,000 employees, the prison is largely responsible for the county's population growth over the 1980's and 1990's. Another major employer is a campus of the University of Maryland-Eastern Shore.

Somerset is taking steps to revitalize its economy. The county's Economic Development Commission was formed to promote investment opportunities. A Comprehensive Plan has been formulated with the following main goals: promote new processes and products; assist local firms to find new markets; target selected industries for labor retraining; promote the shoreline as a major tourism resource; encourage development in selected areas; preserve farmland and discourage sprawl and strip development; concentrate community facilities in centers and towns; develop multi-service centers; plan for a broad range of housing needs; and preserve environmentally sensitive areas including protecting groundwater resources. The University of Maryland is actively supporting the county's development efforts. For example, the university designed an on-campus business incubator facility to concentrate on hydroponics. It is also working with small farmers in efforts to help diversify farming activity.

Public Administration

In both the Republic and Northern Ireland, public administration is very much centralized. Local government has limited autonomy, unlike in the United States where local governments can levy taxes to provide education, police and fire protection, and other community services. In addition, European central government departments are quite compartmentalized. When various funding channels—from national and EU sources—are overlaid on this structure, the picture is one of fragmented efforts in rural development among several players in the field. No single administrative structure is responsible for integrated rural development. Through its local partnerships, the LEADER program in the Republic helps to overcome this fragmentation, but these partnerships have functioned outside the local government system and are considered to be less than fully democratic.

Consequently, the Republic now proposes to place local economic development more within the local government framework, especially important as the EU is likely to scale back from LEADER after 2000. This transfer of decisionmaking is contentious since many local development activists consider local authority structures to be bureaucratic, conservative, and overly influenced by party politics.

Some programs, such as the EU Interreg and the International Fund for Ireland, have promoted cross-border cooperation. This cooperation should be greatly enhanced with the establishment of the new assembly in Northern Ireland, which will have a Department of Agriculture and Rural Development.

In the United States, Federal, State, and local governments have major roles in economic development in both rural and urban areas. Local administrations have taken on new responsibilities, especially in relation to planning and management of the environment. While urban local governments are staffed by professionals, many rural areas depend on civic-minded local residents acting voluntarily. In addition, the number of local government units—counties, towns, special districts—often complicates the delivery of services.

To surmount the problems arising from the patchwork of policies and programs, the U.S. Government began a new initiative in 1990, the National Rural Development Partnership (NRDP). The Federal role evolved from director to catalyst, facilitator, and collaborating partner. State Rural Development Councils (SRDC's)—made up of Federal, State, and local governments, together with representatives of private and nonprofit organizations—are now established in 36 States and they are reported to have modest success in developing effective partnerships and coordination of actions in rural development. Most of the issues on the SRDC agenda concern wider economic and community development, the development of synergies among partners, and ways to address intersectoral problems.

A shoemaker in his shop in the Slieve Gullion courtyard, Armagh County, a Department of Agriculture for Northern Ireland development project. In addition to workshop rental space, the courtyard also includes lodging, a restaurant, and a garden for weddings and receptions. *Photo by Anicca Jansen.*

Communities in the Republic and Northern Ireland have many programs to fund economic development, but appear to face greater bureaucracy than in the United States. Communities must deal with their member state—the Republic of Ireland or the United Kingdom. However, funding from the EU often comes in predetermined annual blocks that are out of sync with the pace of local development. One common complaint of local projects is "Too much cash at the beginning and too little at the end." Another complaint heard is that the "drawing down of funds" is difficult. A complaint in Northern Ireland has been that the numerous programs create too many players in the field. The Northern Ireland Government is in the process of creating a Department of Agriculture and Rural Development to coordinate the rural development programs.

Activism and Vision

Both Irish and U.S. rural development hinges on a small number of local residents who are willing to organize efforts and encourage the community to pursue development strategies. Consequently, local development is partially personality-driven. The new emphasis in the Republic on community development in the local government framework is intended to reduce the dependence on personalism. Northern Ireland has attempted to integrate the bottom-up approach and top-down response by locating Department of Agriculture Rural Area Coordinators in rural areas to work with the local communities.

Universally, a community has to know what it has and where it wants to go. Bureaucracies can support a local vision of community development, but cannot substitute for this. The town of Clones, County Monahan, is one successful rural development effort. Tucked into the border, Clones became isolated when the border roads were closed. Consequently, the local economy suffered. In 1985, nine townspeople started the project that has evolved into the Clones Enterprise Center and the Clones Heritage Center. The town was able to raise about $2.5 million in funding from a variety of sources. Several businesses have located in the area, and the project is considered a model of rural development. Two elements were crucial to this effort. First, the "nine concerned citizens" were instrumental in getting the project going and seeing that it continued for 10 years. Second, the community did a survey in 1985 to determine what the local economy needed and what townspeople wanted. The success of the Clones community leaders was acknowledged when they were hired by the International Fund for Ireland to train other communities.

The U.S. Government similarly supports a community's vision through the Federal Empowerment Zones and Enterprise Communities program. A guiding principle of the program is that a community must have a vision of what it wants to become and a strategic plan for revitalization. The program provides a variety of Federal supports—including technical assistance, grants, and tax credits—to the communities selected. There are 3 rural Empowerment Zones—the Mississippi Delta, the Texas Rio Grande Valley on the Mexican border, and the Kentucky Highlands areas of Appalachia—and 30 Enterprise Communities.

Rural Areas Face the Challenges of Globalization and Devolution

As both the United States and the island of Ireland—the Republic and Northern Ireland—become increasingly involved in the global economy and the World Trade Organization regime, their agricultural sectors must adapt to liberalized trading conditions and lower commodity price supports. In particular, this prospect presents new challenges for farming households and agricultural support systems. For many farming households, the availability of off-farm employment and the earnings it offers may be of more significance than trends in farm income. Efforts to diversify the rural economies of both the United States and the two jurisdictions in Ireland will continue to be part of local rural development strategy. At the same time, supporting good environmental management is also a concern.

In both the United States and the island of Ireland, new forms of rural governance are emerging to implement rural development strategies. Statutory agencies and non-statutory organizations share responsibility for formulating and delivering development programs. In the United States, devolution of financial responsibility through block grants gives States flexibility, within limits, in targeting assistance. Although States and counties have received more authority, they are concerned about "unfunded mandates"—that is, the burden to implement laws and programs without Federal funding. This concern has parallels in the Republic and in Northern Ireland; the EU proposes to transfer some of funding in the form of "national envelopes" rather than as amounts specified for particular purposes by Brussels. This policy means a greater degree of financing must be made by the Member States.

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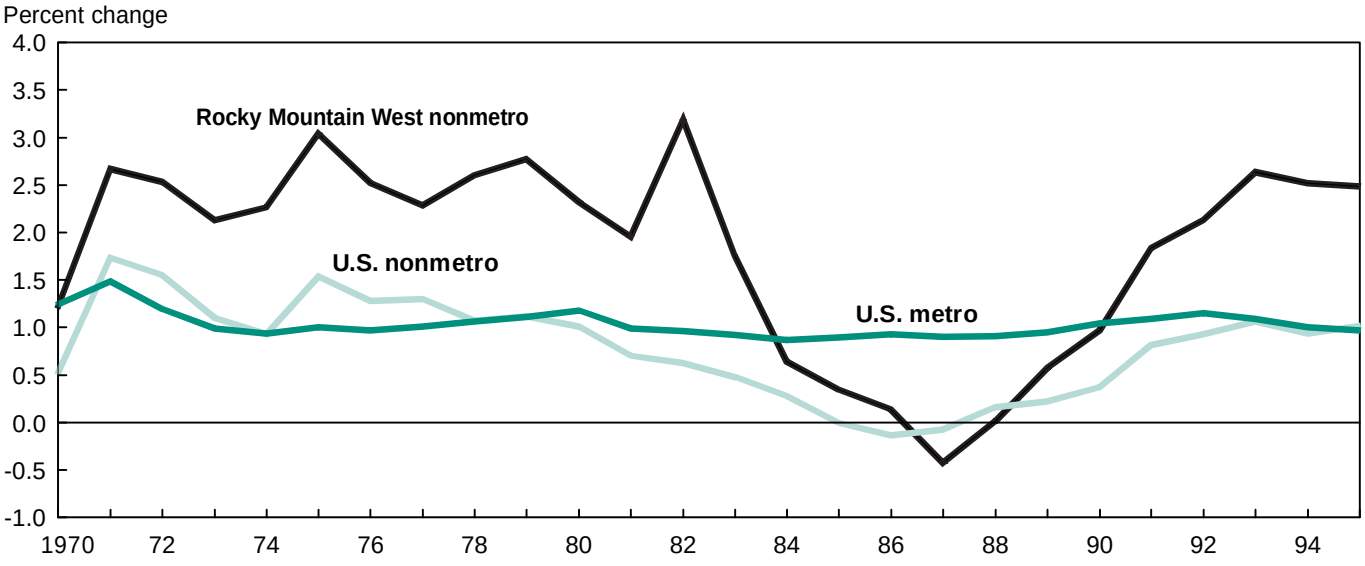
ERRATA

In the previous issue of *RDP* (vol.14, no. 2), figure 1 on page 16 is corrected as follows:

Figure 1

Annual rates of change in population, 1970-95

The Rocky Mountain West has followed national population trends to a degree, although changes in the region have been more extreme



Source: Regional Economic Information System, 1997.